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THE PENDULUM SWINGS BACK

"If materialism means the denial of emotions, imaginings, thoughts, and other mental happenings, it is clearly not something worthy of serious consideration. It is contrary to the facts of experience and clearly self-refuting. . . ." Morris Cohen: *Reason and Nature* (Harcourt, Brace, 1931).

"Somehow or other we feel that man has a greater role than that of mere spectator in the universe. There is a strangely unquenchable longing of the human spirit for the most exalted place and opportunity and scope in the universe inconsistent with the tenets of modern science. . . ." E. A. Burtt: *Metaphysical Foundations of Modern Physical Science* (Harcourt, Brace, 1925).

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BY
MARVIN M. BLACK

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SET UP, ELECTROTYPED, PRINTED, AND BOUND
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To

WILLIAM McDOUGALL

WHOSE ABILITY TO SEE
BEYOND THE PURELY OBJECTIVE FACTORS IN SCIENCE
HAS FURNISHED THE INSPIRATION FOR THE THEME
DEVELOPED HEREIN

PREFACE

Seeing things together as parts of unified totality is necessary if we are to escape the confusion and discord of contemporary civilization. More than ever before there is need of synoptic vision—to see life whole, transcending the piecemeal character of merely partial views and attitudes. On all sides we are met by a babel of conflicting voices: Physics tells us of the world in terms of matter and motion; Biology speaks of cells, gemmules, and the "inner urge" that makes for life and behavior; Psychology uses the language of "drives," "capacities," and "conditioned reflexes"; this group of economists hails one doctrine as the salvation of society; another group sees in it society's downfall; sociology, political science, anthropology, and other social sciences likewise speak a jargon peculiar to themselves—until one hardly knows which way to turn, and finds it difficult to make order out of the chaos of conflicting opinions.

It has been said that we have plenty of philosophies, but no philosophy; plenty of tendencies and movements, but few common premises and common conclusions. As Dr. Alfred Hoernle has so clearly stated, our schools and colleges teach a variety of subjects, sampling, as it were, bits of the contemporary scene, but until recently there has been little attempt to co-ordinate this knowledge into a unified whole. The very increase of knowledge has compelled the instructor to specialize to a point where the power of synopsis is lost; consequently the student views the world as a mere collection of mechanical aggregates, having no connection. It is not strange that the mania for

facts alone has made more and more difficult the problem of eliciting from these scattered bits of theory a unified outlook upon the whole.

Despite the seeming contradictions today among the various schools of thought, however, we need not despair of ever forming a coherent pattern or order. Meaning and purpose appear when we interpret the diverse viewpoints of the physical, biological, and social sciences in terms of the human spirit. Our industrial civilization, with its vast cities, towering skyscrapers, colossal merchandise marts, palatial stock exchanges, and streamlined trains are all creations of the human mind applied to the satisfaction of material wants; our schools and colleges serve to realize our educational ideals; while the painstaking researches and discoveries of our scientists are part of man's attempt to realize the longings of his soul for the "more beyond."

It is quite significant that true Science today is not content with the purely mechanical explanation of reality, but has a much broader vision, and is "seeing things together" as parts of a unified whole. Contrary to the dogmatic assumptions of certain schools of thought, Science today is not opposed to the synoptic attitude, but rather encourages it. More and more scientists are beginning to realize, as Darwin did, that by neglecting the *feeling* side of their natures, their lives become warped and they are enabled to see only one phase of reality. Can we afford to lose in scientific analysis what the poets and artists and lovers of nature have understood from the beginning of time? They have all "intuitively felt, rather than intellectually perceived, the vision of things as totalities . . .

neither fancifully, mystically, but sympathetically, in their wholeness."

A complete and abundant life, then, does not come from attention to the purely material factors of civilization, but only through an interpretation of such facts in terms of their ultimate effect upon the behavior of mankind. Scientific analysis tends to destroy the sense of the whole, but armed with the poet's imagination and the scientist's pragmatic viewpoint, we may, in truth, discover a pathway to a total view of nature and the world. There are after all no sharp lines of demarcation between science and philosophy, the mechanical and the purposive, mind and matter, but each is a means toward the understanding of reality. "Facts" in themselves are meaningless—it is the human mind that gives them value and purpose.

This is, of course, no new theme, but in the rush and push of contemporary life, with its glorification of the achievements of Science, we seem to have forgotten a truth which has persisted throughout the ages. We profess to be in constant search for the ever new, tying first to one wind of popular doctrine and that—But after all, what we want is not something new, but old things in a new way. With this thought in mind, then, have I attempted the present volume. May it offer some bit of inspiration to those who feel that the old values have gone by the board, and that the pursuit of truth is like the chase for an ever-changing chameleon!

I will not attempt here to acknowledge my indebtedness to all who have helped make the writing of this book possible, but I owe an especial debt of thanks to Dr. Charles A. Ellwood for his cordial interest, his timely suggestions, and his constructive criticisms while this book was in

progress. I am also especially indebted to Dr. E. G. Conklin of Princeton, and to Dr. C. Judson Herrick of the University of Chicago for their reactions to the chapter on biology; to Dr. Paul R. Farnsworth, Dr. John E. Coover, and Dr. Harry B. Torrey of Stanford University for valuable guidance in the literature of psychology, psychic research, and Lamarckism respectively. In connection with the chapter on current trends in medical thinking, I wish particularly to thank Dr. Ray Lyman Wilbur for pertinent suggestions in the field of medical education and its significance for society as a whole. I am likewise indebted to Dr. H. Flanders Dunbar, of the New York Academy of Medicine, for his reaction to the book as a whole, and for material upon the physical-mental aspects of illness; to Drs. Franklin G. Ebaugh and R. A. Noble, of the National Committee for Mental Hygiene, for literature upon the place of psychiatry in medical education; to Dr. Franz Alexander, of the Institute for Psychoanalysis in Chicago, for material showing the relationship of psychoanalysis to contemporary medicine; and to Professor Madison Bentley of Cornell for helping me orient myself in the vast amount of current literature dealing with mental hygiene. I am grateful also to the late Dean Willard G. Bleyer of the School of Journalism at Wisconsin, and to Dean Eric W. Allen of the University of Oregon, as well as to Dr. Chilton R. Bush of Stanford, for their aid in connection with the chapter on educational trends in journalism.

I would also like to express my appreciation to Dr. Clifford Barrett, Professor of Philosophy at Princeton; to Dr. Wilbur Urban, Professor of Philosophy at Yale; Dr. Shailer Mathews, of the University of Chicago; and

to Dr. A. A. Kern, Professor of English at Randolph-Macon Woman's College, for their reaction to the book as a whole and for apt suggestions here and there. At the same time, I must likewise express my thanks to Dr. Ernest Nagel of Columbia and to Dr. Martin ten Hoor of Tulane for their extremely sharp criticisms of this work and for frankly registering their utter disagreement with its conclusions.

At this same time I must also acknowledge my especial indebtedness to the following publishing houses who have graciously permitted me to reproduce quotations from their works: D. Van Nostrand, Harcourt Brace, Macmillan, Harpers, Scribners, Williams and Wilkins, the university presses of Cambridge, Clark, Duke, Stanford, and Yale, Open Court, McGraw-Hill, Whittlesey House, G. P. Putnam, Crowell, Appleton, Nervous and Mental Disease Publishing Company, Journalism Quarterly, Henry Holt, Kegan Paul, Murray, Williams and Norgate, Blackie and Son, Duckworth, Doubleday Doran, W. W. Norton, Longmans Green; to Dr. Harry Elmer Barnes for permission to use excerpts from his *Living in the Twentieth Century;* and to the Editor of the Bureau of Educational Research at Ohio State University.

I would like also to thank the Editors of *Social Science, World Affairs Interpreter, The Crozer Quarterly,* and the *New Orleans Medical and Surgical Journal* for permission to reprint Chapters I, II, III, VI, and VII, which originally appeared in those magazines in slightly different form.

In the list of suggested readings following each chapter, I have taken this means of further acknowledging my indebtedness to the various authors from whom I have

gleaned material for my theme. If I were to pick out any particular books which have helped most to stimulate my thinking, I would by all means mention Dr. R. F. Alfred Hoernle's *Matter, Life, Mind, and God,* William McDougall's *Modern Materialism and Emergent Evolution,* and portions of Dr. Morris Cohen's *Reason and Nature.* These three books are radically different in many respects, but are alike in calling attention to the inadequacy of a narrow, piecemeal conception of reality. To Professor Cohen I am especially indebted for the stimulation that comes from actually sitting in his classes, and hearing from his own lips, in his inimitable way, his devastating criticisms of hidebound, dogmatic assumptions that would narrow our views of the world, and condemn us forever to consideration of the practical and the worship of "facts" alone. To these authors, then, I am especially grateful for stimulating ideas, but of course cannot hold them responsible for the interpretation I have put upon them.

It is my earnest hope that those who may be induced to follow the line of thought developed herein may be enabled thereby to get beyond the manifold confusions of the present day, to see things in relation to the whole. As the pendulum has swung toward the stressing of the purely objective factors in our civilization, so now it seems to be swinging as strongly in the opposite direction, to a growing emphasis upon those imponderables that underlie it.

MARVIN M. BLACK.

PALO ALTO, CALIFORNIA,
November, 1937.

FOREWORD

Social scientists often say that if the social sciences are to rest upon the results of other sciences, even in part, they become impossible, because no man can get a general view any more of the results of all scientific research. Each science, they declare, must have its own field of research and perhaps even its distinctive subject matter. Synthetic or synoptic science is an absurdity, which only a few philosophical minds are foolish enough to waste time upon. *Here, however, is a book which does present a synoptic view of the results of all the great sciences which are antecedent to the sciences of man and of human society.* I wish to commend it therefore to my colleagues working in the various fields of social science. The book does not claim to avoid controversial issues or to present the views of all the various schools in the various sciences. It presents rather what it believes to be the deeper trend in recent scientific and philosophical work. It is a sort of manual of scientific sanity for all scientific workers, but as such it will hardly be less interesting to students of religion and social policies.

The author, Mr. Black, comes well equipped to his work. He has not only been a teacher of sociology and economics, but has long been a student in the fields of biology, psychology, and philosophy. His reading along these lines has been so broad and varied that he is well qualified to write a sort of guidebook through the mazes of recent scientific and philosophical thinking. Moreover, he has had considerable experience as a practical journalist, and

therefore his style will be found acceptable to the general reader.

But I desire to commend his book especially to students. In his Preface the author rightly says: "Our schools and colleges teach a variety of subjects, giving us a good cross-section of the contemporary scene, but until recently there has been little attempt to co-ordinate this knowledge into a unified whole. The very increase of knowledge has compelled the instructor to specialize to a point where the power of synopsis is lost, consequently the student views the world as a mere collection of mechanical aggregates, having no connection. It is not strange that the mania for facts alone has made more and more difficult the problem of eliciting from these scattered bits of theory a unified outlook upon the whole." As an antidote to this tendency in our education, I can think of nothing better than a careful reading of this book. It gives a synoptic, totalitarian view of our achievements in science and philosophy which will help the student to get rid of narrow, one-sided, particularistic views. These narrow, one-sided, particularistic views have been the bane of the students of the social sciences. Any book which will emancipate us from these errors is to be welcomed. I commend the book heartily therefore to all students of human problems.

CHARLES A. ELLWOOD.

DUKE UNIVERSITY,
October 7, 1937.

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Chapter I

THE MECHANISTIC THEORY BECOMES BANKRUPT

Contemporary supporters of the mechanistic theory have accepted uncritically the assumptions of physical science, permeated with the teachings of medieval philosophy, and have been as dogmatic in upholding these doctrines as any theologian of old in upholding the tenets of his religious faith. To them, man no longer occupies the prominent place he once had in the cosmos; his conscious strivings—once the all-controlling factors—have become mere physicochemical responses to external stimuli, with no significance whatsoever. Teleological explanation is taboo among certain groups in the scientific world, who regard happenings in terms of the relations of things to human purpose in the same light as belief in miracles. To them the world of nature exists not that it might be enjoyed by man, but merely for the physicist to observe with his calculating instrument; the life of the organism is no longer a mystery, but something which the biological scientist has discovered in the test tube.

Indeed, man, today, in the opinion of the mechanists, is but the chance and temporary product of a blind and purposeless nature, a veritable intruder in her domain. His ideals, his hopes, his mystic raptures, are the creatures of his own imagination, having no place in a world of dancing atoms and conditioned reflexes. The laws of nature, inexorable in their application, grind slowly but surely to snuff out man's all too brief candle of life. All

he can do is to grit his teeth stoically, and no matter what comes, make the best of it—for whether man performs a noble work of art, or filches his neighbor's purse, each act is of no consequence among automata, engaged in a futile striving which ends only in oblivion.[1]

Unfortunately, this view has been accepted uncritically by many intellectuals who, in other respects, are exceedingly broad-minded and tolerant in their views. Such uncritical adherence to mechanistic dogma has not only poisoned the stream of philosophical thought, but has retarded the advance of scientific thinking by attempting to apply to human behavior the methods and language of the physical sciences. The old Descartian dualism of mind vs. matter still prevails in high places, clouding the issues, and setting up as a guide a gloomy, deterministic philosophy that would make man ashamed of his very existence. Vaunting their "open-mindedness" and their "scientific attitude," many of our intellectuals have nonetheless refused to inquire into the foundation of such a belief, and have worshiped at the shrine of mechanism as devotedly as any savage before a primitive fetish. In truth, all our sciences have been devotees at this same shrine before which Philosophy has also unhesitatingly kneeled.

Recently, however, there have been unmistakable signs that the influence of mechanism is beginning to weaken. Strange to say, the movement to overhaul traditional conceptions of thinking in terms of physical science has not come from philosophy but from the biological sciences. Physics for some time has already repudiated the tenets

[1] See Bertrand Russell: "A Freeman's Worship" in *Mysticism and Logic,* referred to in Edwin A. Burtt: *Metaphysical Foundations of Modern Physical Science* (Harcourt, Brace, 1925).

of a purely mechanistic doctrine, and has overhauled its teachings in the light of a broader experience. The radical physical hypotheses of Einstein; the world-view of such philosophers of science as Eddington, Jeans, and Whitehead, showing the inadequacy of a purely mechanistic interpretation of the universe; and the experiments of Millikan and others with cosmic rays—these are samples of happenings in the field of physical science that have caused scientists to question the very foundations of their own beliefs.

One of the keenest critics of the mechanistic doctrine is Dr. Morris Cohen, whose *Reason and Nature*, published in 1931, is already a classic, and has undermined the very foundations of the mechanist cult. Through the principle of polarity he would reconcile the viewpoints of the mechanists and teleologists as two opposite poles of the field of reality.[2] This principle stresses the fact that the traditional dilemmas on which conflicting schools of thought have been built generally rest on differences rather than real contradictions. They are simply two different ways of viewing reality. Nothing can be gained, in his opinion, by one side trying to prove the other is wrong, but by trying to get at the differences, to determine to what extent each side is justified in its assumptions. Viewed in the light of the principle of polarity, opposites such as the ideal and the real, the actual and the possible, substance and function, like the positive and negative poles of a magnet all involve each other.

Dr. Cohen defends the postulate of scientific materialism that all natural phenomena depend upon material condi-

[2] *Reason and Nature* (Harcourt, Brace, 1931). See Preface, p. xi, also Book I, Ch. IV, "Metaphysics of Reason."

tions as a necessary requirement of an orderly world. But he strenuously objects to that aspect of materialism which allies itself with sensationalistic empiricism and belittles the importance of relations and logical connection between things. He feels that "the identification of empiricism with the scientific attitude is just a bit of natural complacency," and that "the excessive worship of facts too often hides a disinclination to enter into a genuine inquiry as to whether they are so." [3]

Biology, physiology, and psychology, following the lead of physics, are now looking critically at the atomistic and mechanistic preconceptions that have shackled them for two hundred years, and are tending to adopt a teleological interpretation of nature. Perhaps the most outstanding critic of present-day biology is J. H. Woodger, whose *Biological Principles* [4] looses some telling darts at his mechanistic brethren. He shows that despite their loud protestations against the subjective, or metaphysics, they are already up to their necks in it by their abstractions of matter and mind. In attempting to be entirely "objective," they are flying in the face of the very founders of physical science, who emphasized theoretical aspects of their far-reaching discoveries. If they appeal to Galileo as the exponent of complete objectivity in science, they will find that he, too, stressed its philosophical aspects. Modern biologists, says Woodger, forget that Galileo himself did not consider mathematical treatment of nature as the whole of reality, but regarded it as a "necessary abstraction" for working purposes. He did not regard color, smell, and other sensations as "unreal" just because they

[3] *Ibid,* p. 160.

[4] Harcourt, Brace (1925).

constituted an obstacle to all tidy explanations of the world in terms of atoms. Yet, this has been regarded as the type of scientific explanation par excellence. Thus, willy-nilly, science has slipped into metaphysics, and can not avoid searching for the unknown.

So anxious have some biologists been to escape any taint of metaphysics that they have shied at the use of the word "organism," for fear they might be considered "unscientific," and have attempted to explain organic behavior in terms of mathematical physics. But, in the opinion of Woodger, the amount of biological knowledge amenable to treatment by mathematical physics is very small. We are no nearer the truth, says Woodger, "just because we try to interpret everything 'scientifically.'" Biological scientists of today have criticised the Church for its attack upon Galileo in the Middle Ages, and yet they are adopting exactly the same procedure as that of the ecclesiastics of old. They attacked Galileo, not because of his hostility to the Church, Woodger argues, but because he was challenging a well-entrenched system of thought. As the ecclesiastics of his day were tied to preconceived ideas of the world, which they did not want disturbed, so today our high priests of mechanistic science oppose new ways of thinking because they have been trained to the older notions. For them to accept new ideas is as difficult a mental process as it was for the churchmen in the days of Galileo. Small wonder, then, that biology today is finding it difficult to break loose from the bonds of mechanism.[5]

The contention among the old and new schools of thought in biology, Woodger feels, is typical of the situ-

[5] J. H. Woodger: *Biological Principles* (Harcourt, Brace, 1925).

ation which prevails among all schools of opposing thought where each claims a monopoly on truth. The mechanist bases his claims on a long series of past triumphs and upon his "objective" observations. He accuses the vitalist of prejudice and "subjective" factors, never dreaming that he may have a beam in his own eye. The dogmatic vitalist, on the other hand, contends that living things, inexplicable on mechanistic terms, belong to a different order of being. Each eyes the other with suspicion, and cannot understand the other. The mechanist thinks the vitalist an emotionalist, a dreamer of shallow mind; the vitalist concludes his opponent is a man of crude sensibilities, who will not see the truth. And all the time the difference between these views rests on differences of opinion about the correct interpretation of what is given in experience. Having already made up their minds in advance about the "problems of life," there is no profit in discussion, and a stalemate is reached. But, in Woodger's opinion, neither has a monoply on truth, and both schools need to understand that a true science of biology will follow whatever method affords a means to new discoveries, not closing its mind by the acceptance of either dogmatic vitalism or an equally dogmatic mechanism.

In the field of physiology, the mechanistic hypothesis is likewise definitely on the downgrade. Recent investigations have proved that organic activity cannot be explained merely in terms of structural behavior, but is part of a co-ordinated whole. "The mechanistic theory is therefore bankrupt," says J. S. Haldane, in his *Sciences and Philosophy*, and has "ceased to interest contemporary physiologists." In his opinion, the actual developments of ordinary physiological investigation have carried physi-

ological knowledge to a point where the mechanistic speculations of the last century are inadequate in the understanding of life. "But a little consideration is sufficient to show us that from the very beginning there was not the slightest prospect for a complete systematic treatment of biology as part of physics and chemistry." [6]

Answering the argument of the mechanists who hold that the structural machinery of organic life goes on reproducing itself indefinitely, he states that the more structure and chemical complication we actually discover, or assume, in the organism, the more hopeless does the problem of its reproduction and maintenance become from a mechanistic standpoint. The very structure which the mechanists maintain is reproduced mechanically is not explicable in terms of mechanistic theory. They fail to take account of the co-ordination, which can be traced in the activities of living organisms from the earliest stages of its life history. This co-ordination is of such a nature that the organism's normal structure and activities are maintained and reproduced. All the definite mechanical structures—skin, bones, lungs, etc.—are maintained by co-ordinated activity for which there is no mechanical explanation. "The fact of such co-ordinated maintenance and reproduction may not be evident to philosophers and theologians," Haldane adds, "but it is forced to the attention of medical men." [7]

Haldane decries the attempts of the mechanists to draw hard and fast lines between structure and activity of the organism, for in the organic world of life, structure and activity cannot be separated from another. Between liv-

[6] Doubleday, Doran (1929), p. 54.

[7] J. S. Haldane: *Sciences and Philosophy* (Doubleday, 1929), Ch. V., p. 65.

ing structure and its environment, we can draw no distinct line as we seem able to draw between an inorganic body and its environment. We can only regard the parts as organized manifestations of a persistent whole—the co-ordination of structure and activity in the very essence of life. Once for all, says he, we must firmly take up the position that for biology, the Newtonian philosophy is an impossible scientific basis, since it does not correspond with what is visible and tangible in the organic world.

It has been said that what Haldane is asking physiologists to give up is not their methods of investigation—which are the same as his—but the intellectual background of naïve materialism. He is asking them, in the words of Professor Whitehead, "to become philosophical and enter into a thorough criticism of their own foundations." [8] The physiologists have prided themselves on being "objective" in their interpretation of matter, thinking themselves far above metaphysics, when as a matter of fact by conceiving matter as bits of stuff pushing each other about they are steeped in subjective thinking. They have been taking matter as ultimate, without knowing its meaning, and have been trying to make the facts of the organism fit this notion, although physics has long since thrown overboard this metaphysical abstraction.

It is a mistaken idea to believe, says Haldane, that because science has cleared away many mysteries in the world, our experience has become much more intelligible than that of our forefathers' day. But in so thinking, we forget that each scientific advance seems only to throw into clearer relief the mystery which remains. The advance of

[8] A. N. Whitehead: *Science and the Modern World* (Macmillan, 1925).

scientific knowledge does not seem to make either our universe, or our life in it, any less mysterious. In proportion as we know more and think more, scientific problems still unsolved seem to define themselves progressively. The biological, the physical, the mechanical conceptions are all necessary to interpret experience, but each is only part of the whole—reality must include them all.

Another instance of the declining popularity of mechanism is found in current acceptance of the theory of "creative evolution" as explanation of the origin of life from lifeless matter. This doctrine has done much to alter traditional ways of thinking in the biological sciences, and in the opinion of C. C. Hurst (*Mechanism of Creative Evolution*),[9] one of its chief exponents constitutes definite evidence of the futility of purely mechanistic explanations of organic life. He believes that the discovery of the gene as the unit of life and creative evolution has, through experimental genetics, laid the foundations of an exact science of experimental evolution. "These fundamental developments in biology, when they become generally known," says he, "will naturally cause considerable changes in view in the kindred branches of physiology, pathology, biochemistry, biophysics, taxonomy, and phylogeny, and eventually in the more remote realm of philosophy."[10]

Despite the statement of Huxley in the nineteenth century that, if we had sufficient data, we could predict the appearance of flora and fauna thousands of years in the future, it is impossible to predict the precise nature of future species owing to the indeterminate nature of muta-

[9] Cambridge (1933).

[10] By permission of the Macmillan Company, publishers, and Cambridge University Press.

tions and transmutations. It is at this point, says Hurst, that scientific determinism breaks down—the deterministic and mechanistic evolution of the nineteenth century, with its closed circuits and endless cycles, is altogether too inadequate to account for creative evolution with its novelty and progressiveness. Besides, says Hurst, "if we replace the biological unit of creative evolution—the genetical species—by the wider philosophical units of creative evolution—matter, life, mind—the inadequacy of determinism becomes even more marked. No deterministic system, scientific or philosophical, could possibly have predicted life from matter, or mind from life and matter." [11]

It may be in the principle of indeterminacy, adds Hurst, that we come up against the reality behind our man-made laws of nature. Our human geometrical minds work naturally in terms of mechanism and the determinate results of cause and effect—anything outside that seems unreal to the human conceptual mind. Hence, this indeterminacy may, indeed, be a universal principle of thought behind and beyond our human conceptions and laws of mechanistic determinism. This seems to involve a prime thinker and creator outside man's own creation. In this respect, adds Hurst, modern scientific speculation returns to the ideas of Plato, who taught that in creation, time and space came into being at the same instant, so that if they ever were to dissolve, they might be dissolved together—an interesting anticipation of Einstein's demonstration of the inseparability of space and time.

Continuing this line of thought, Hurst argues as follows: "The great principle of indeterminacy in nature thus

[11] *Ibid.*

may be tentatively interpreted as the natural mode of action and manifestation of pure thought or spirit in matter-life-mind, while determinism, which is nonetheless real, represents an inner and secondary principle, based on the geometrical mode of action of the human mind. It may be that the discovery in our time of scientific indeterminacy and relativity foreshadows the coming of the next great step in the creative evolution of mind far above the present concept." [12]

In the genetical evolution of mind through life and matter, Hurst believes there are definite indications that mind is gradually increasing its influence as creative evolution proceeds, while matter—the oldest of the three—is gradually losing its influence. By the exercise of the human mind, human selection is gradually replacing natural selection in many respects. He does not doubt but that, through the applications of experimental science, man, as time goes on, will be able more and more to control and change his environment, and his conditions of life as well as those of her organism. Man's increasing control over matter is due almost entirely to the exercise of his conceptual mind in scientific experiments.

In his *Modern Materialism and Emergent Evolution*,[13] William McDougall holds views on the causal efficacy of mind similar to those of Hurst in the above, although not agreeing with him in every particular. He takes other emergent evolutionists to task because they have left out mind in the evolutionary process. This is due, says McDougall, to their attempt to divert public attention from

[12] *Mechanism of Creative Evolution.* By permission of the Macmillan Company and Cambridge University Press.
[13] D. Van Nostrand (1929).

the problem of causes, with concentration merely on the fact that evolution has occurred. They are not so sure as they once were on the causes of evolution, and are aware that they have no answer consistent with modern materialism and its purely mechanistic principles. A few still claim to find a complete answer in Darwin's principle of natural selection working upon innumerable variations, but these few, says McDougall, "are a laggard remnant."

The most outstanding exponent of purposivism in psychology today, William McDougall, in his contribution to the *Psychologies of 1930*,[14] scores American psychologists for their complete blindness to the most peculiar, characteristic, and important feature of human activity, its goal-seeking. They have regarded all bodily actions and phases of experience as mechanical reactions to stimuli, and all learning as the modification of such reactions by the principle of association.

Now, happily, all this is changed, he adds—the animal psychologists have begun to realize that any description of animal behavior which ignores its goal-seeking is futile, any "explanation which ignores motivation, grossly misleading; they are busy with the study of 'drives,' 'sets,' and 'incentives.'" It is true that their recognition of goal-seeking is generally partial and grudging, but recognize its efficacy they must.

Much the same state of affairs, he says, prevails in current American writings on human psychology. Its problems are no longer discussed, experiments are no longer made with total and bland disregard for the purposive nature of human activity. The terms, "set," "drive," and

[14] Clark University Press (1930).

"incentive," having been found indispensable in animal psychology, are allowed to appear in discussions of human problems, in spite of their anthropomorphic implications; "prepotent reflexes," "motives," "drives," "preponderant propensities," "impulses toward ends," "fundamental urges," and even "purposes" now figure in the texts. "Partial, half-hearted, reluctant as is still the recognition of purposive activity, it may, I think," says McDougall, "fairly be said that only the crude behaviorists now ignore it completely—that, with that exception, American psychology has become purposive, in the sense that it no longer ignores or denies the goal-seeking nature of human and animal action, but accepts it as a problem to be faced." [15]

According to McDougall, mechanical causation has no leg to stand on today. During the nineteenth century, under the prevalence of the faith that strictly mechanical or Newtonian causation was adequate to the explanation of all events of the inanimate world, it was natural enough to regard such causation as the only type of naturalistic causation, and, therefore, to class intrinsic teleological causation with the extrinsic teleological causation of the theologians as supernatural. But now, when it has become clear that faith or hope was illusory, and that we have no insight into the nature of mechanistic causation, this ground for repudiating internal teleological causation has been taken away, and none remains.

The remaining prejuice against teleological causation,

[15] *Psychologies of 1930* (Clark University Press, 1930), contribution by William McDougall. Compare Pitirim Sorokin's criticism of the sociologistic school in sociology: *Contemporary Sociological Theories* (1928), pp 453-463.

however, is more than a hang-over from the days of belief in strictly mechanical or Newtonian causation. To accept the teleological causation of human agents is to believe in the causal efficacy of psychical events. Psychologists have felt that to do this would be to commit themselves to psychophysical dualism or animism, and thus offend against the theory of continuity of evolution of the organic from the inorganic, and the common preference for a monistic world-view. If scientists still shy at psychical interpretation, however, there are two monistic theories, both implying continuity of evolution, that have been accepted both by philosophers and men of science—psychic monism and emergent evolution.

The psychic monism of Paulsen, Morton Prince, C. A. Strong, Durant Drake, and L. T. Troland, explains McDougall, has no ground for doubting the casual efficacy of psychic events—teaching that all events are psychic. The emergent theory is equally compatible with and, in fact, asserts the causal efficacy of psychic events and the continuity of organic with inorganic evolution. It is a monistic theory, and hence fulfills all the requirements of the psychologist unable to blind himself to the reality of goal-seeking behavior and purposive activity, yet must cling to monism and continuity of evolution.

"With these alternatives open to the choice of the psychologist," adds McDougall, "he has no valid ground for denying the causal efficacy of psychic activity in the natural world, no ground for continuing to regard internal teleological causation as supernatural, and therefore no ground for blinding himself to the purposive nature of human activity." [16]

[16] *Ibid.*

Like McDougall, Morton Prince, in his "Fundamental Errors of Behaviorists," [17] has sharply criticized the tenets of behaviorism. Their fundamental error, says he, consists in the denial of consciousness as a cause of bodily reaction. He challenges the behaviorists, in a criminal trial, to argue the murderer's case before a judge, making the plea that, being an automaton, his "criminal intent" had nothing to do with his criminal act—that it was his neurones, or his ductless glands, or his conditioned reflexes that did the crime. Imagine the judge's reply! Why did not the counsel for Loeb and Leopold put a behaviorist on the stand as an expert in psychology?

Because, says Prince, "the whole of criminal law and criminal responsibility is based on 'criminal intent'—the doctrine that consciousness is the cause of bodily actions —the seal of 'criminal responsibility.' " [18] So with the motives of sympathy that move us to give money to beggars, those that lead us to write, study, and do the multitude of other daily acts—purely automatic? Nonsense, says Prince.

A second fundamental error of behaviorists, in Prince's opinion, is to suppose that behavior today can be completely explained in terms of the correlated neural and other bodily processes alone. We do not have even the rudimentary knowledge that will allow us to follow the reactions to any stimulus beyond the afferent receptors, through the cerebral pathways that are correlated with mental experiences. He reduces the argument to the absurd by the example of going to market to buy one's

[17] *Psychologies of 1930* (Clark University Press, 1930). Cf. Sorokin, *op. cit.*, Ch. XI, pp. 617-627.
[18] *Ibid.*

dinner, showing how impossible it is to trace the path of all the stimuli that determine one's choice of purchases.

The third error of the behaviorists, he says, is in confining themselves to only one method—the objective method, that of the physical sciences. The physicist himself, however, he maintains, has recognized that there is a point beyond which he cannot go—for example, when he reaches the problem of ultimate energy, of the electron. Yet he does not close his mind to other methods, but tries anything else that will help him solve his problem. So it is with the problems of the medical and biological sciences. They should not adopt one method to the exclusion of all others. Plainly, different problems require different methods, according to their nature.

So when the behaviorists inquire into the problems of psychology, one may ask, Is the objective method adequate to resolve completely the problems involving consciousness? When he follows the "adequate stimulus" beyond the sensory receptors, does he not run up against a stone wall, or lose himself in a jungle?

The behaviorist's prize exhibit of purely mechanical action is that of emotion, a heredity-pattern-reaction, or mechanism. But, asks Prince, is this a complete explanation? Will the discovery of any particular visceral, glandular, or other bodily process in connection with particular behavior, explain the why of the behavior which subjectively appears to be not mechanistic but purposive? Why in one situation the individual withdraws from a given stimulus, in another examines it intently, in another embraces, according as he experiences a sentiment of aversion, curiosity, or affection? In other words, there would seem to be something over and above the visceral (etc.) proc-

esses, and which is of the order of consciousness—a part of the reaction that enters into the causal change of events, from stimulus to behavior.

The Gestalt psychologists, while unwilling to admit openly the causal efficacy of mind, or purposive explanation of behavior, have nevertheless furnished excellent evidence of the part that intelligent, purposive behavior plays in the acts of some of the lower and higher animals. The classical illustration of this fact is in the experiments carried on by Köhler with anthropoid apes.[19] Despite the statements of the behaviorist that consciousness should have no place in the description of animal behavior, he shows definitely that it is impossible to leave it out. He cannot agree with Watson in his method of condemning all difficult-looking problems in the nervous system as pure mysticism and aftereffects of the introspection time. That gives a simple science only a few concepts; but, says he, "a good deal of the world of behavior and its problems does not occur in this science." If we observe the faces of anthropoid apes, of monkeys, and of dogs, we get the impression that those faces show very different degrees of "understanding" or "insight." Observation of the animals in action and experimentation on them prove, says he, "that our expectation was justified, at least with regard to the high place we would tend to give to the apes." [20]

Köhler's experiments seem to prove that the ape not only shows memory, but actual insight into the solution of a problem, all of a sudden hitting upon the right solution, which could not have been derived from any previous trial-

[19] See W. Köhler: *Mentality of Apes* (Harcourt, Brace, 1926).

[20] "Intelligence in Apes"—*Psychologies of 1925* (Clark University Press, 1925).

and-error method. Clever apes can be taught even to differentiate colors by proper rewards, and even fish have been known to react in the same way.

Try as they will, says Köhler, the behaviorists cannot get around using anthropomorphic terms to describe behavior. When we say an ape looks "interested," or he "observes," he means exactly that—for to observe a thing in everyday life has a perfectly objective meaning, a certain visible and characteristic behavior toward something.

"To describe merely the contraction of all the muscles which are employed when the chemist, the policeman, or a chimpanzee 'looks interested' would be beyond my forces," says Köhler. If we restrict one meaning of these terms to behavior, he adds, "our description of behavior would become extremely poor, not more than a meager rest of the concrete world of behavior would be accepted in our science; and our theoretical concepts would very soon be exactly as poor and meager as our material." [21]

Mechanistic interpretation of human behavior is losing favor not only in the fields of biology, physiology, and psychology, but in the field of medicine as well. As shown by Dr. John Rathbone Oliver, in his *Psychiatry and Mental Health*,[22] medicine, once the supporter of purely mechanistic behavior, has at last come to recognize the fact that human ills can best be treated if the physician knows something of the patient as an individual—how he reacts to certain stimuli, his mental habits, and his particular train of thought that makes him a separate personality. Only a short time ago, says Dr. Oliver, the average physician was a pure materialist, interested in nothing he could not per-

[21] *Ibid.*

[22] Scribners (1929).

ceive through the senses. Since the mind was not approachable in this wise, he waved it aside as nonessential, or else shut it up in a watertight compartment for the alienist to examine. Medical books of the early Victorian period contained little about the influence of the mind on bodily symptoms, but today one can hardly pick up a book on medicine that does not stress the important influence of mental elements in disease.[23]

"Christian Science, like the early heresies of Christendom," says Dr. Oliver, "developed as a protest against a neglect of the mental elements in disease and as an illogical emphasis upon the influence of 'mind over matter.' But modern medicine is learning its lesson." He indicates that remarkable changes have taken place in the treatment of patients: Instead of lumping together patients with the same kind of disease indiscriminately—tuberculosis patients in one group, cardiac patients in another, kidney disease patients in still another, etc.—each patient is treated according to his particular reaction to the disease. Victims of tuberculosis, for example, may be two very divergent personalities, with different strains of heredity, brought up in different environments, trained according to varying habit-formations, and exposed to different sources of mental and physical stress. Where one may have a spot of lessened resistance, the other may have an unbroken wall of defense, hence each reacts in different ways. Therefore, says Dr. Oliver, "*until the doctor knows each as a personality* [italics mine], until he has a detailed knowledge of his heredity, family history, childhood,

[23] See the heading "Disease-Philosophical Aspects" in the *Quarterly Cumulative Index Medicus* for the increasing number of articles in medical journals on mental aspects of illness.

adolescence, manhood—until he can get inside his mind, and can reach some general idea of just how and why he has become what he is, the physician cannot treat the case intelligently." [24]

In this same connection, a further instance of the steadily declining favor of the mechanistic theory has been reported in academic circles. A new theory of psychology, which promises to revolutionize thinking in the biological and social sciences, has just been developed by Professor Prescott Lecky at Columbia University. The new school rejects the dogma that man is a machine, insisting that he must be conceived as a unified living system whose behavior expresses a purpose to maintain its unity. Based upon the scientific attitude of such men as Einstein, Heisenberg, and Planck, the new system adopts the non-mechanistic philosophy developed by the new physics in the study of the atom, and overthrows the old concepts of behaviorism and the strictly materialistic viewpoint of certain psycho-analysts. Mr. Lecky holds that man must no longer be thought of as a complex mass of cells, molecules, or atoms, but as a unit in himself, a system that operates as a whole. His behavior, said he, must be interpreted in terms of action rather than reaction—that is, in terms of purpose.

As a method of study, mechanism is invaluable, but the fault has been in the attempts of many scientists to claim for it a monopoly of interpretation of the facts of human behavior. Space and time, atoms and ions, genes and chromosomes, the miscroscope's revelation of the complexities of living organisms arouse the admiration of the

[24] John R. Oliver: *Psychiatry and Mental Health* (Scribners, 1929).

poet and the curiosity of the scientist. The heavens declare the glory of God and opportunity for astronomers, but they declare neither exclusively. The attempt of scientists to divide the world into separate halves of mind and matter has been responsible for much of the confused thinking that prevails today.

Mechanism is still all too prevalent in contemporary thought, but there are encouraging signs that its influence is waning. Various theories of creative evolution and "orthogenesis" are the order of the day, even among the simon-pure scientists. Renewed interest in the possibility of Lamarckian transmission of acquired characters is attracting the attention of leading physiologists and experimental psychologists; such leaders of biology here in America as Lillie, Herrick, and Jennings, join Professors Woodger and Haldane abroad in calling aloud for the recognition of a "more beyond" in physicochemical behavior, while the writings of McDougall and Morton Prince are typical of the close agreement today between a purposive psychology and practical medicine in the fashioning of human behavior and treatment of human ills.

To the scientists of today, therefore, who still cling to the banner of mechanistic theory, may we cite these words of William James: "These most conscientious gentlemen think that they have jumped off their own feet—emancipated their mental operations from the control of their subjective propensities in toto. But they are deluded. They have simply chosen from among the entire set of propensities at their command . . . the meanest, lowest,

aridest result—namely, the bare molecular world—and have sacrificed all the rest." [25]

It is indeed strange that men of science, although perceiving clearly that the power of foreseeing the future course of events has steadily developed through biological evolution, becoming in man his most striking characteristic, yet persistently deny that this consciousness, this intelligent foresight of ends, has meaning in our everyday lives. It is only because, blinded by the *fata morgana* of objectivity, they see in the noblest works of man only a response to mechanical stimuli, and, with the fire of religious zeal would strike down all heretics who refuse to bow down and worship their golden calf of dogmatic mechanism.

CHAPTER I

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Chapter II

BIOLOGY SEEKS A "MORE BEYOND"

Although the mechanist doctrine still prevails among certain schools of contemporary thought, in the field of biological science, at least, there is a growing recognition of its inadequacy. Few biologists at the present time hold that vital phenomena can be explained by the laws of mechanics and causality alone.[1] The great developments in biology and psychology, and the recognition of the unique parts that life and consciousness play in evolution, have made scientists wary of attempting to explain phenomena entirely in terms of matter and mechanical action. On the surface, vitalistic phenomena appear to be non-purposive, but our most outstanding biologists admit that the evidence is far from conclusive. Gradually, biological scientists are being forced to recognize that there is a "more beyond" which they cannot fathom—the emergence of entirely *new* qualities from living matter not resolvable into anything that went before. Science seems to have gone as far as it can with experimentation—the physico-chemical explanation of the activity of vital phenomena does not tell the whole story—and has now entered the realm of philosophy, speculating upon the nature of reality.

Today, philosophers and scientists of varying schools look upon physicochemical action only as a *method* of

[1] For an excellent discussion of the case for and against mechanism in biology, see Morris Cohen: *Reason and Nature,* Book II, Ch. 3, "Law and Purpose in Biology."

approaching vital phenomena, rather than as the *explanation* of life itself. At each level of conscious being there is "something" entirely new that emerged from the level immediately below, but whose nature science cannot fathom. Matter and life, or more than they appeared to be on the surface.

There is a growing recognition that "the world is a house of many mansions—each with its own key—and that the attempt to find in physics the skeleton-key that will unlock all doors is bound to fail." [2] Along with the belief in different levels of being has arisen the necessity of assuming the operation of an underlying *nisus* or urge in Nature not only to maintain itself at any particular level which it may have reached, but to advance to even higher levels. For this reason, there is today a revival of interest in the doctrine of Vitalism, which assumes the presence of some psychic force outside of mechanical influences, guiding and directing them.

In general, the vitalists hold that life is not reducible to biologic laws, for the purposive character of life makes it impossible that it should be subject to purely mechanical principles. Back of all phenomena of life they assume certain "principles" or "forces" directing them into the proper channels. This doctrine of the vital force appears under various names, and is the basis of the philosophy of Bergson, Driesch, and von Hartmann. To Bergson it is the "elan vital"; to Hans Driesch, "entelechy"; and to von Hartmann, the "unconscious." Originally associated with the doctrines of these philosophers, Vitalism now

[2] J. H. Muirhead: *Preface to Second Series of Contemporary British Philosophy,* p. 16. Used by permission of the Macmillan Company.

finds independent support in recent biological research. The facts of organic life as expounded by such well-known scientists as J. S. Haldane, E. G. Conklin, J. Arthur Thomson, and Arthur Dendy have forced into evidence the presence of an integrating, self-transcending principle not resolvable into mere physicochemical behavior. All these "forces" function as if they were psychological in character, but are not directly knowable. Thus, on the basis prepared for it by physicochemical action, there emerges in life something not resolvable into it, yet triumphing in and through it.

The problem of Vitalism (or teleology) versus Mechanism is closely connected with the body-mind problem in philosophy—a problem dealing with the freedom of the will in ethics, and with the philosophy of religion.[3] Vitalists believe in an unpredictable purpose in evolution; mechanists regard every event that happens as predictable from preceding conditions. Hence, mechanism is the present-day form of materialism in philosophy; Vitalism, a kind of idealism. Both schools of thought see in evolution the operation of a *creative principle* that gives rise to new and higher forms of life, but differ in their conception of the ultimate form which reality should assume.

In truth, the theory of Vitalism seems to provide a common meeting-ground for the opposing schools of thought in their attempts to interpret the nature of reality. Through their growing belief in the presence of invisible forces permeating organic activity, our leading biologists have become metaphysicians. Not satisfied with the inadequate solutions of a purposeless mechanism, they

[3] See Hans Driesch: *History and Theory of Vitalism* (Macmillan, 1914).

are beginning to feel that the course of life is not a series of accidents, but an orderly ascent from the earliest forms up to man. To the idealist this creative urge, or nisus, toward increasing diversity and perfection indicates the reality of an ultimate Spirit; to the biologist, the subjection of the cosmic process to law and its tendency to produce ever newer and higher forms of life suggests some "vital principle" behind it all. Both idealist and mechanist are agreed that creation is not an instantaneous act, but an eternal process. Evolution is not a mere passive unfolding of which each step is rigorously determined by the preceding, but a process of active reconstruction, conditioned by the materials of nature.

One of the most outstanding instances of the conception of a more beyond in biological phenomena is furnished by William E. Ritter and Edna W. Bailey in a fascinating treatise entitled *The Organismal Conception—Its Place in Science and Philosophy.*[4] In this essay, they survey the results of investigations in different departments of nature, and are forced to conclude that the reciprocally generative and constitutive relation of a whole to its elements reaches its fullest expression in living nature. Painstaking research in many subdivisions of living nature has shown this peculiar relation to be so dominant in living bodies as to necessitate the conceptual subordination of elements to their wholes. Ritter and Bailey indicate that there are elements in the living organism that cannot be explained in terms of processes belonging to the science of inorganic nature. There are certain characteristics present in organic matter which are lacking in nonliving material. The

[4] *University of California Publications in Zoology,* Vol. 31, No. 14, 1927-29, pp. 307-357.

organism can actualize potentialities of certain not-living substances which cannot be actualized in any other way.

The assimilation of food in our bodies, for example, is a familiar manifestation of these principles. Every one of us manages, by some astounding action as yet unknown even to the most expert physiologist, to convert food taken into his own body to the requirements of his personal activities. This is in agreement with the statement of C. J. Herrick, that "the living body shapes its own destiny, creates its own form and dynamic patterns, and organizes its own materials, during and by means of which its varied functions are carried on." [5] Likewise, when such a competent mathematical physicist as Dr. A. N. Whitehead says that "an electron within a living body is different from an electron outside of it, by reason of the plan of the body," [6] Ritter and Bailey are led to remark, "We begin to ask what manner of beings we are, and what is the general scheme of things of which we are parts."

As the conception of the organism as a unified whole has forced its way into the biological sciences, the conception that an analysis of the parts will entirely explain their wholes has proved inadequate in every subdivision of biology where basic problems are under investigation. For this reason, Ritter and Bailey feel keenly the necessity of a supplementary hypothesis which recognizes that living bodies are as real and potent in influencing the inorganic elements which they take into themselves, as these elements are in influencing the bodies which they enter.

[5] *Neurological Foundations of Animal Behavior* (Holt, 1924), p. 253.

[6] *Science and the Modern World* (Macmillan, 1925), p. 111.

In line with these conclusions, Dr. Edward G. Conklin [7] calls attention to the seemingly intelligent and purposive behavior of even the miscroscopic cells of animal bodies to meet emergencies. For example, the skin forms a pigment for protection against sunburn; plants often protect themselves from unusual dryness by growing a thicker epidermis; in winter, horses grow a thicker coat of hair; while all animals and plants have more or less ability to repair injuries.

The capacity of many animals for neutralizing poisons, however, is an even more striking example of the influence of organic matter upon inorganic. This principle is put to good use in the making of various vaccines and antitoxins, produced by the formation of different kinds of "antibodies" in the animal. For example, the violent toxin formed by diphtheria germs is counteracted by an antitoxin formed in the body of the victim of the disease. The same is true of the poisons formed by many other disease germs, each peculiar poison leading to the formation to its own peculiar "antibodies." We obtain artificial protection against certain disease germs by using the antitoxins formed in the bodies of other animals, but "no chemist has ever yet been able to synthesize these chemical substances in the laboratory," says Conklin. Further manifestations of apparent purpose in the activity of the human body is found in the chemical and physical processes of digestion, assimilation, and excretion; of enzymes, vitamins, and hormones which have such profound effect upon health, growth, and development.[8]

[7] *Scientific Monthly,* October, 1932, Vol. 35, pp. 360-363.

[8] For a more philosophical discussion of this point see the interesting book by Jacob Von Uexkull: *Theoretical Biology* (Harcourt, Brace, 1926).

Most of these processes going on in the living being, Conklin feels, are useful responses to contingencies as they arise. They occur only in response to a present need; they are individually acquired fitnesses.

This same point is stressed by Conn and Conn in their readable book, *Bacteriology* (Williams & Wilkins, 1923), in connection with nonliving ferments, the enzymes. The nature of these enzymes, they indicate, has been a mystery from the beginning and is still nearly as much of a mystery as ever. For they are produced as secretions from living organisms, and apparently in no other way. Apparently they are chemical substances of a complex nature, but they are entirely different from any other chemicals known to man. Some scientists hold the theory, however, that they are not chemical substances at all, but "forces"—energy instead of matter; others put them in a class by themselves, "semi-living" in nature.

Doctor Conklin agrees with the mechanists that the seemingly extraordinary fitnesses of organisms for relation with each other may be due in part to the influence of natural selection; but in his opinion, this does not explain individually acquired adaptations where useful responses are made by animals and plants to conditions never experienced before—as, for example, immunity to poison. In such cases, there is no elimination of the unfit—the same animal or plant continues to survive and gradually acquires the ability to make the useful response through trial and error. Intelligence and purpose in animals and man are explicable in the same way. Those acts failing to give satisfaction are eliminated; the successful ones are retained. Human intelligence and purpose are for Professor Conklin the highest types of adap-

tation—hence all adaptations appear to him as intelligent and purposive.

An even more striking manifestation of the unique character of life is that, under certain conditions, organic matter has the power of resisting the attack of certain microorganisms; while in living condition, for example, protein material is capable of resisting nearly all kinds of microscopic invaders. When the bacteria causing common putrefaction are inocculated into living tissues, they are unable to obtain a foothold, cease to grow, and die. But when inoculated into the same tissue after the animal's death, they begin to feed on it and multiply apace. "This is a phenomenon of greatest importance," remark Conn and Conn, "that living tissue has the power of resisting the attack of these microorganisms. It is no simple phenomenon, and bacteriologists are still searching for its cause." [9] In the face of such facts as these, it is small wonder that mechanism has become less and less cocksure, and biological scientists have been forced to confess that there is still a mystery in life which they have not yet been able to fathom.

In their monumental work, *Outlines of General Biology*,[10] Sir Arthur Thomson and Patrick Geddes make use of the mechanistic assumptions of biochemistry and biophysics, but at the same time seek to do justice to both mechanistic and vitalistic doctrines. In their opinion, mechanistic principles should not supplant but complement psychologic and neovitalistic doctrines. Not committed to any preconceived views themselves, they give numerous illustrations of organisms functioning in en-

[9] *Bacteriology* (Williams and Wilkins, 1923).
[10] Harpers (1931).

vironment, and of environment's impressing influence upon the organism. For each type of organism, they seek "to appreciate, as far as may be, its Psycho-biosis as well as its Bio-psychosis—its Mind-body as well as its Body-mind." They emphasize the indispensable role of physico-chemical action in the development of the organism, but only as a phase of the process of Life. In their estimation the living-being is not governed by purely mechanical forces, but exhibits *purposive behavior* in its interaction with environment. Organic life is based on mechanism, but *transcends* it. Hence, any Biology that denies the significance of Mind in evolution is speaking only half-truths.

Consequently, it is simply waste of time, they argue,[11] to pit against one another the mechanistic and vitalistic descriptions of the life process, as if one must choose between them. Every reasonable vitalist wishes chemico-physical analysis to proceed as far as possible, but objects to the assertion that mechanical action accounts for the whole of reality. These are "legitimate materialisms" that may be granted as parts of the development process, but they do not constitute the bedrock of reality. On his side, however, the extreme mechanist is unwilling to concede certain "legitimate transcendentalisms"—the possibility that something analagous to the mental aspect of an intelligent animal may be at work in the developing ovum. He is not quite sure, yet, but continues to hope that later discoveries may warrant acceptance of a complete mechanistic description for the future. The vitalist, however, contends that in the higher reaches of life the

[11] *Ibid.*

mental aspect is undeniable—that mentality cannot be "juggled out of mechanism."

Rejecting the "Positive" Vitalism of Hans Driesch, Thomson and Geddes express their approval of what they term "Methodological Vitalism." This does not reject mechanism altogether, as does positive vitalism, but considers it as a supplementary principle. Mechanistic descriptions are indispensable, but at best "are far from giving an adequate account of the life of the organism." So are vitalistic descriptions indispensable—whether the organism is governed by an "entelechy" or is one of a long series of "syntheses," its life cannot be adequately defined in terms of mechanism. Vitalists may be on the right track, but scientists are naturally somewhat suspicious of "principles" and "entelechies," and shy at "vital forces" in disguise. Thomson and Geddes are unwilling to set up a positive vital principle as the basis of reality, but are willing to consider vital factors as complementary to the mechanical, working in conjunction with them.

Thus between the abstractional Scylla of "vital force" and the materialistic Charbydis they follow the passage called "Methodological Vitalism." This does not rely on any "vital force," "biotic energy," or "entelechy," yet on the other hand does not attempt to coerce the organism into the framework of mechanism. It says in substance: "There is a chemistry, a physics, a mechanics and dynamics of the living organism—but when they have finished their ledger, the description is biologically inadequate." Take the illustration of the Aberdeen swallow returning home after a long sojourn in Africa, thousands of miles away. The mechanist would say this was due to the same mechanical causes that make the movements of comets

predictable. But the swallow differs from the comet in being "individually adjustable," in having a measure of indeterminism, in being free to err, in being able to transmit its way-finding capacity to offspring. Different from mere lifeless matter, organisms show a purposive behavior, a "power of enregistering individual and racial experience, and a capacity for varying and evolving." [12]

To Arthur Dendy, writing in his *Outlines of Evolutionary Biology*,[13] one of the most difficult problems in connection with any living organism is that of automatism. Does an Amoeba, for instance, do anything really automatically or spontaneously, or are all of its actions the result of the application of external stimuli to the explosive molecules of living matter? Is the organism merely a machine run by the environment, or is it *something more?* This brings us face to face with the age-old question of the existence of an animating principle or "soul" which exercises some sort of control over the mechanical processes upon which the life of the organism depends. Dendy concedes that the theory of vitalism, by assuming the existence of an animating principle or vital force in all living things, enables us to avoid many difficulties, but doubts if it really explains anything. He feels, in fact, that by more intensive study and experimentation of vital phenomena, we can interpret their behavior more fully in mechanistic terms. But, he adds, "this is a very different thing from saying that chemistry and physics will ultimately yield a complete explanation of vital phenomena." [14]

[12] Thomson and Geddes: *Outlines of General Biology* (Harpers, 1931).

[13] Appleton (1912).

[14] *Ibid.*

In similar vein, Alfred J. Lotka, in his *Elements of Physical Biology*,[15] holds that the operation of a fundamental purpose or design in nature can neither be proved nor disproved. We are, therefore, at liberty, he feels, to believe in such a purpose, to embrace this purpose for our own. Through the exercise of *will* we have the possibility of ultimate survival. Selection, then, would seem to point the way toward a will, in conformity with that general principle which he describes as the "Supreme Purpose of the Universe."

Although not sure of any "supreme purpose" of life, yet Herman Reinheimer, in his *Symbiogenesis*, feels that contact with the external world, and the "necessity to vibrate in tune with the biological world from within," may be responsible for the genesis of the nervous system and of organic consciousness. Something more than the mere action of the environment is necessary to account for its growth and development. The whole question of the origin of life is so complex that it is as difficult to say whether a purely vitalistic impulse, or a physicochemical past started it, as to state which came first, the hen or the egg. The first impulse may have been a blending of both psychical and mechanical forces. If so, then we must discard the cramped formula of the mechanists—life can not be measured in parts, but is manifest only in its wholeness, its unifying totality. Whether an organism has a nervous system, and is conscious of what it does or not, makes little difference. What matters is that it becomes an active participant in the "business of life."

The "unifying totality" of Reinheimer becomes the "un-

[15] Williams and Wilkins (1924).

conscious" in the philosophy of von Hartmann. Closely akin to Schopenhauer's "Will" as the vital force in nature is von Hartmann's theory of the "Unconscious," which plays the same part in the development of vital phenomena as the *elan vital* does for Bergson. Like Driesch's "entelechy," von Hartmann's "Unconscious" does not work in and through the material factors of the organism, but from the outside, in. Just what the "Unconscious" is, Hartmann shows from a study of the behavior of certain animals after decerebration. The fact that certain acts continued even after removal of the brain proved to him that the "subordinate nerve-centers must also have a consciousness as well as the higher consciousness correlated with the brain." Thus, there exists in men an unconscious will, guiding their behavior, whether or no, just as the "censor" of Freud looks on from the subconscious, and steers the consciousness mind into proper conduct.

Unconvinced, however, by the various theories of a vital force or unconscious mind, there are still certain psychologists—the Behaviorists in particular, and the supporters of Psychophysical Parallelism and Epiphenomenalism—who deny the necessity for any psychic factors in organic behavior, holding that purely mechanical causation will suffice. Nevertheless, the now popular doctrine of "emergent evolution" makes it possible for them to invoke psychic factors as aids to the explanation of behavior, and still not be considered "unscientific." While unwilling to admit such factors at the front door, these psychologists gladly admit them at the rear, and are thus able to save "face" with the magic of a word. This doctrine teaches that the psychic factors have "emerged" from and

are generated by the highly complex brain-processes, and that they, in turn, play back upon and modify the course of the brain processes from which they emerge.

The appearance of such a theory today has been due to current dissatisfaction among intellectuals with the Spencer-Darwinian scheme which gave so little room for Mind in the scheme of nature. Through "emergent evolution" it is hoped to rescue Mind from its position as a mere spectator, and to show how life and Mind evolved from Matter. Numerous attempts have been made to formulate evolutionary theories, omitting reference to vital phenomena or mental events, but thus far no such scheme has been possible. In each theory offered to date, bits of Life and Mind have adhered to the very Matter from which Mind is presumed to have emerged. Even the orthodox Materialists have been forced to recognize the influence of Mind in the evolution of the material universe. Their self-styled "new teleology" pictures the universe as the product of some Super-Mind, some *deus ex machina*, who sets a mechanical world emerging in a mechanical way to produce purely mechanical beings who, however, somehow attain a Mind that is not mechanical.

In their various attempts to explain the origin of life and mind from matter, thinkers of many different schools of thought are converging toward the central point of "emergent evolution," although some of them seem scarcely to realize the direction in which they are headed. To illustrate: In their scheme of "configuration," or Gestalt, the Gestalt psychologists hold a belief corresponding to the creative synthesis of emergent evolution; in his *Space, Time, and Deity*, Samuel Alexander posits the emergence of higher and higher selves from the orders immediately

below, finally to emerge into the supreme Mind, the Deity; Lloyd Morgan envisages the emergence of Matter-Life-Mind, with Mind as the controlling factor over all events; while in his *Holism*, Jan C. Smuts postulates an organismic theory akin to that advanced by the biologist, William E. Ritter. In his *Development and Purpose*, L. T. Hobhouse regards conscious activity as a guiding factor in the development of the organic whole, and posits a teleology similar to that advocated by William McDougall. Likewise, Dr. D. W. Wheeler, in his *Emergent Evolution*, holds an evolutionary viewpoint similar to both Hobhouse and McDougall. Thus, all these writers touch in some way or other upon the part played by teleological factors in the development of vital phenomena during the process of emergent evolution.

To the mechanists, who hold that physicochemical activities constitute the whole of reality, evolution means the "unfolding of something already enfolded"; to the Vitalists, who believe in some purpose back of Nature's processes, evolution means the "outspringing of something wholly new." From this latter meaning of the word has come the term, "emergent evolution," associated particularly with the name of Lloyd Morgan. In brief, Morgan's theory of emergent evolution is as follows: Inorganic nature exhibits the character of emergence in the series—atom, molecule, crystal; and this continues into organic nature in a further series—Life-Mind, Reflective Thought, the final end of evolution. Each step in the series is unpredictable, and is wholly due to natural forces, but the impetus comes from God. Emergent evolution is thus opposed to all mechanistic interpretations of nature, and to

Morgan this driving force is called "the ultimate pervading activity." [16]

While Alexander would rule out any attempt to explain emergent evolution by mechanical means, Arthur Lovejoy, in *Meaning of Emergence,* sets forth an emergence theory in which mechanical determination is held to be entirely compatible with belief in emergence. Yet, in his opinion, emergent evolution would exclude the conception of an event as manifesting no law, or mode of uniform behavior, which contains no existent except that found in the antecedent phase of the sequence to which it belongs.[17] To maintain that everything is explicable without emergence is to imply that there is no existence whatever which could not have been discovered by a scientific angel, observing the cold-gaseous-nebula stage of the development of our solar system. Through his "emergent materialism" Lovejoy postulates the emergence of new types of entities, of new kinds of events in the form of "transphysical" emergence. Such entities are psychical events and physical objects formed by the action of certain forms of "radiant energy" upon integrations of living matter. Just what the final goal of his emergence will be he does not state, but holds that in the millions of years that still remain for life on earth, yet higher levels may emerge that we cannot foresee.

Another phase of the body-mind controversy of today is the so-called "Interaction" theory of J. B. Pratt. A firm believer in teleological causation, he denies that matter and physical energy are the whole of reality, and assumes

[16] See his *Emergent Evolution* (Holt, 1923).
[17] D. S. Robinson: *Anthology of Recent Philosophy* (Crowell, 1929), pp. 349-355.

that there is another realm over which mechanical laws have no sway. To him the determining power in some acts of human bodies is found in the physicochemical processes, but in "processes of an utterly different nature—namely, those of the rational and purposive will." Thus, there is a causal efficacy in the events of our psychical life—a purposive activity can and does interfere with the working of mechanical laws, guiding them in definite directions. True, the act can be explained mechanically *after* it happens, but it was not caused by the mere sequence of events. Mechanistic evolution denies that we can either choose or know the consequences of our acts. Yet, Pratt argues that the material world of laws may precede the world of "selves." However, this material and mechanical world, he feels, cannot from its own resources produce this world of selves. Can purely mechanical processes account for what is nonmechanical? [18]

Thus, today, thinkers of varying schools of thought find a common meeting ground in the concept of emergent evolution. This appears to satisfy those who cannot give up belief in mechanical causation, giving them a convenient way out for the explanation of the appearance of mind. At least, it has become evident that organic phenomena are not explicable entirely in terms of chemistry and physics, but that the organism can be understood only as a unified whole, whose parts act in complete correlation.

[18] From *Matter and Spirit;* Robinson's *Anthology of Recent Philosophy* (Crowell, 1929), p. 363.

CHAPTER II

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Chapter III

WILLIAM McDOUGALL AND CONTEMPORARY PSYCHOLOGY

Just as Biology has been forced to abandon the purely mechanistic conception in its study of the organism, Psychology today is also gradually discarding the atomistic interpretation of mental life, and leaning more and more toward the totalitarian point of view. Since the beginning of the twentieth century, the interest of psychologists has shifted from analysis of consciousness to the probing of the inner totalitarian structure of the mental life, or the "personality." Formerly, mind had been considered merely as an empty stage upon which states of consciousness automatically moved. The belief that it was a somewhat mysterious by-product, a mere train of passive reflections of things and events, gave rise to the doctrine of psychophysical parallelism which enjoyed a tremendous vogue. Acording to this belief, "consciousness" is not produced by the physical processes of the body, since it has no causal relations with them, but merely runs parallel, neither having anything to do with the other. Today, however, this conception has been found inadequate. Psychologists are now asking what is behind the scenes that pulls the strings of consciousness which affect the whole individual and make him behave as he does. Whereas psychologists were formerly concerned with classification of assumed "states" of consciousness,

today they seek to uncover the capacities, drives, incentives, or the "facts" of consciousness.

The older sensationalistic and analytic psychologists tied up their theories with the conceptions of atomistic physics and endeavored to explain mental behavior in terms of separate "elements" or "pure" sensations. As a result, psychology split into numerous highly specialized branches, so intent on analyzing the parts of the living mechine that they overlooked the significance of the whole. They sought to find mental units comparable to atoms, and to translate all forms of mental action in strictly mechanistic terminology.

But even back in the 1890's, these narrow views were being questioned. The three most outstanding critics of the psychology of this period were Henri Bergson, William James, and William Dilthey.[1] They took issue with those who "atomized" consciousness, each arguing in his own way that consciousness is not piecemeal, but total in character. They were heartily in sympathy with empirical investigation, but claimed the preconceptions of physics vitiated the proper understanding of the workings of the mind.

Bergson criticized the psychology of his day for attempting to apply the concepts of mathematical psychophysics to consciousness, and for ascribing spatial characteristics to a purely temporal explanation of consciousness. He held that our states of consciousness do not form a clearly arranged sequence, but flow into and

[1] For an excellent summary of their criticisms, see Richard Muller-Freinfels: *Evolution of Modern Psychology* (Yale, 1935), pp. 89-104. See especially William James' *Principles of Psychology,* Vol. I, Chs. VI, VII, IX; Henri Bergson's *Time and Free Will;* William Dilthey's *Descriptive and Analytical Psychology.*

through one another so that we cannot say whether they are a unity or plurality. Our concepts are at best only schematic outlines to which we subordinate the passing flux of reality. By them we carry over what is externally static into the inner world of consciousness.

William James attacked vigorously the view that mental facts could be treated as purely physical, as atoms from whose synthesis higher states of consciousness could be constructed. What exists, he argued, are not these separate entities, but a personal consciousness, a continuity of constantly changing states that never recur the same way within the same consciousness. Through his "stream of consciousness" James asserted that just as in the external world there are not only solid objects, but also *relationships* between them, so there is also a consciousness of such relationship. Furthermore, he denied that consciousness is simply a passive mirror, reflecting everything around it indiscriminately. It is active, makes a choice from many impressions. Our "experience," he continued, is not purely objective, but conditioned by our habits of attention. Behind the impressions that come to the consciousness there is an active "thinker," or "self," which governs and selects, and sees them as a whole.

William Dilthey likewise attacked the atomistic concepts of the analytic psychologists. Through his *Intellectuality of Inner Perception* he held that we directly experience relationships and connections, and not simply pure sensations or isolated impressions. Dilthey sought to find the structural whole of the developed mind. Psychology, he argued, is not interested only in the stones, mortar, and workmen in building, but in the architecture of the completed structure; in the inner relationship of the parts.

He wished to reveal the development of a dynamic consciousness, not to label a static "element." He sought to study the mind in action, not as a collection of individual atoms having no connection.

These three noted critics of psychology differed in many respects, but agreed in their criticism of the attempts to explain consciousness in atomistic terms. Each of them showed that the socalled "elements" and "combinations" were not derived from experiment at all, but theoretical—that something other than the purely physical aspects must be considered. As a result, analytic psychology gradually began to alter its notions. Little by little, such expressions as "totality," "structure," "self," became current in the literature, replacing those borrowed from an outmoded physics.

It is a most interesting fact that, at the present time, the newer schools of psychology have rejected the atomization and mosaic-like synthesis of the older analytic psychologies, and are leaning more and more toward the totalitarian viewpoint expressed by Bergson, James, and Dilthey some forty years ago. These schools are empirical in so far as they seek to demonstrate states of conscious experience, based on case studies of actual behavior, but in their preconceptions they are as subjective as they have accused the older introspectionists of being. Today, it may well be said that all the major schools of psychology are behavioristic—in the broadest sense. But if by studying the acts or behavior of the individual in given situations, they think they have entirely eliminated objectionable (to them) "psychic" factors, they are mistaken. All the "facts" of behavior are meaningless except

for the *interpretation* put upon them by the a priori viewpoint of the investigator himself.

This is equally true of the "functional" school represented by John Dewey, of the "faculty" school of E. L. Thorndike and the educational psychologists, of the Binet-Simon and Stanford intelligence test groups, or even of the Watson school of behaviorism which worships at the shrine of mechanism. All these, as different as they are in many respects, have at least one point in common—they seek to discover the innermost constitution or structure of that something which governs the behavior of the individual, whether it be called "mind," "personality," "consciousness," or what-not. The "functionalists" today are not concerned with a search for "elements" of consciousness, but seek to determine the "functions" it must fulfill in adjusting itself to the outer world. The emphasis is now upon "action" and "conduct" in recognition of the relationship thought to exist between states of consciousness and motor acts and reflexes in studies of this adjustment. The "faculty" school of experimental psychologists who measure "drives," "dispositions," "capacities," and the intelligence testers with their "I. Q.'s" are likewise concerned with conduct and relation to a given situation under observation. Each of these accepts the existence of certain innate structures of consciousness and assumes a totality—something other than that consciousness—from which their very terms arise. They seek to discover the relationship between the outward signs of behavior and that totality that lies behind the scenes.

Thus, strange to say, we appear to be back again to the age-old concept of "soul" in that contemporary psychology is attempting to correlate the separate "faculties"

with the inner unity that governs them. Unlike the older associationist psychology, it does not regard the "soul" simply as the sum of all conscious contents, but seeks to discover what makes this sum into an organic whole—what it is that governs and directs the behavior of the individual. Formerly a total "soul" was postulated, divided into various parts to explain the separate functions. Present-day psychology starts with a designation of states of consciousness, classifies them, and emphasizes general laws. Then it questions the faculties performing various separate functions, and seeks to find the unity or totality behind these faculties. Therefore, while attempting to be strictly "objective" and empirical, psychology has not yet been able to get rid of the "soul," though it masquerade today under various guises. While the aims of the functional school and those engaged in measuring "capacities" have been purely practical, their experiments have led away from the psychology of consciousness to the psychology of performance, to the measurement of something other than analysis of consciousness itself.[2]

Even more striking is the fact that the Watsonian cult of extreme behaviorism has likewise been forced to adopt the totalitarian viewpoint in its dealings with consciousness. Like other contemporary schools of psychology, Watsonism professes to have no concern for "meanings" and normative factors in organic life, but studies the objective data of acts of behavior under experiment for comparison and tabulation. But these "facts" must be interpreted by the experimenter to give them significance. The behaviorist himself must posit something more than

[2] See Muller-Freinfels, *op. cit.*, pp. 287-292.

appears in the physical, observable conduct—in other words, he must make normative judgments as to what the facts may mean. Finding the atomistic conceptions of physiology inadequate here, Watson admits that psychology must study behavior as a whole and not look only at the operation of the separate parts of the body. In other words, he finds it necessary for proper explanation of behavior to see the individual functioning as a totality, with all parts in proper relation to the whole.

Perhaps the most outstanding exponent today of the totalitarian viewpoint in psychology is William McDougall who has long been an ardent supporter of the causal efficacy of mind as a factor in organic behavior.[3] Believing the "soul" to be a genuine reality, a center of influence and energy, he has paved the way for the thesis that our voluntary actions are instances of teleological intervention in the course of events. It is right here, incidentally, that McDougall clashes with the strictly mechanistic views of the Watsonians who deny any purposive character to behavior, explaining it entirely in terms of conditioned reflexes. Despite this tremendous difference in outlook, nonetheless McDougall and the behaviorists each deals in his own way with the problem of totality.

For his teleological views and his doctrine of instincts Professor McDougall is still a pariah among contemporary psychologists generally; but disregard him they cannot, for his contribution to the science of psychology is too great. Although his views on instinct have been attacked and ridiculed many times, it is significant that

[3] See particularly in this connection his *Body and Mind* (Macmillan, 1920).

psychologists today are paying more and more attention to the relation of instincts to emotions. Through his work in animal and child psychology, McDougall has been among the first to point out the instincts as the bases of emotions. Aside from the factor of striving, he considers that they also have an emotional and cognitive aspect, although still rooted in bodily dispositions of behavior, not conscious as such. The views of Woodworth in his *Dynamic Psychology* (1918) are somewhat similar in his assumption of a mass of patterns, innate capacities, not clearly defined by name. Each of these studies and similar ones seek acts, capacities, drives—factors beyond consciousness—and have proceeded beyond single acts to the positing of a totalitarian self.

In a very readable book, *Modern Materialism and Emergent Evolution*,[4] McDougall cites some interesting evidence of the present swing toward his once-rejected views among the writings of contemporary scientists, presumably hostile to his teachings. In the writings of certain naturalists and physiologists he sees a decided leaning toward his view that all behavior and mental activity are both instinctive and intelligent. Studies of the so-called "instinctive" behavior have been made for some time, but McDougall has stressed the equally important feature—its adaptability to varying circumstances. Intent chiefly upon revealing various instinctive acts, investigators have been little concerned with the ability of each animal to adapt its instinctive action in accordance with the particular circumstances of its environment.

[4] Van Nostrand (1929). In the discussion which follows, I have drawn freely from some of the illustrations given in this little book.

Recently, however, this one-sided emphasis has been corrected by a number of observations of the adaptative variations of instinctive actions, among which McDougall cites R. W. G. Hingston's *Problems of Instinct and Intelligence*[5] as an outstanding example. Other interesting observations of the adaptative variations of instinctive behavior of the lower animals have been made by William E. Ritter. In his *Natural History of Conduct*,[6] he describes in detail the behavior of a trap-door spider in constructing the movable, hinged lid of its burrow. A number of the operations, such as bringing the earth and depositing it on the expanding lid, and of discharging web-material on the earth, are in his opinion clearly instinctive in character. But, he adds, "the mere accumulation of materials, clay, and web-substance would not make the lid. Some fashioning of materials is necessary. This modeling of raw materials into the nicely-fitting, freely-working trap door is the really astonishing part of the whole operation." Thus along with the typically instinctive phase of the building, he preceives an aspect of intelligence which supplements the defects of instinct, and permits adaptation to the peculiar circumstances of each case.

According to McDougall, the behavior of such low forms of animal life, such as the insects, illustrates two important features: (1) the goal-seeking nature of animal activity—that is, the persistent direction of action toward the attainment of some goal; and (2) the adaptation of such action in such a way as to promote the attainment of the natural goal in spite of varying circumstances peculiar

[5] Macmillan (1929).
[6] Harcourt, Brace (1927).

to each occasion. Therefore, in his opinion, these two fundamental features of behavior are the fundamental objective evidences of mind, of intelligent and purposive guidance of bodily movements.

These views of McDougall find an interesting parallel in the writings of Dr. Friedrich Alverdes, of the University of Halle, who expresses himself as follows in his *Social Life of the Animal World:* "Many writers speak of the instinctive and intelligent actions of men and animals as though these two types of action differed fundamentally from one another. As against this view, it must be asserted that a large instinctive element enters into every form of intellectual activity; whilst no instinctive action ever runs its course altogether automatically and mechically, but always contains in addition to its fixed, unchanging components, a variable element more or less adapted to the particular situation." [7]

In recent studies of the behavior of the higher animals, McDougall sees even more convincing evidence for the acceptance of his views. Writing on the "Nest-Building of Birds" (*Journal of Animal Behavior*, Vol. I, No. 3), F. H. Herrick asserts that "Instinct alone furnishes the building impulse and holds the builders wonderfully true to their ancestral types." Although he speaks primarily of instinct, he appears to recognize the two types of behavior on which McDougall has insisted in connection with insects: the propensity to nest-building, on the one hand; and on the other, the ability to guide in detail their urge, or tendency, so that it works out in the construction of a specific nest-pattern.

[7] Harcourt, Brace (1927)

Likewise, experimental studies of the behavior of mammals seems to give still stronger support to McDougall's view that instinctive and intelligent acts are inextricably connected. In the lower mammals such as the rat, for instance, instinct plays a predominant part, but McDougall has shown that the adaptability of the rat's behavior to particular circumstances is much greater than has been commonly supposed. Through painstaking experiments with the white rat and a box with twenty-four-interlocking latches, he endeavored to prove that the rat's ability to open all of them, after repeated trials, is due to the purposeful, or goal-seeking, activity in reach for food inside the box. He considers the action of the rat as "intelligent" in that it was adapted to special circumstances which imply appreciation of the relation of things dealt with—i.e., those relevant to the attainment of a goal. Similar experiments with a raccoon appear to illustrate the same truth, the only difference being that the raccoon appeared more "intelligent" than the rat—he learned more quickly to adapt his actions to the attainment of a goal.

The setting up of psychological laboratories to measure the strength of propensities and intensities of conations tends to lend support to McDougall's teachings. Psychologists in various sections are extremely busy today endeavoring to find "incentives," "determining tendencies," or the "drives" which give the impulse toward goals. In C. J. Warden's *Measurement of Animal Drives*,[8] McDougall notes an outstanding example of this new type of investigation. In this book he describes a method by

[8] Columbia (1931), referred to in *Modern Materialism and Emergent Evolution.*

means of which it seems possible to measure fairly accurately the strength of various "drives" of white rats. To McDougall such a measurement of "drives" is frank recognition of the fact that behind all striving—whether it be the effort of the wasp to build its nest, the rat to reach its food, or the man to win a race—in each there is a conation, some mental activity, guiding and directing the physical behavior toward the attainment of a goal.

In his discussion of instincts, McDougall has pointed out that instincts come into play most effectively when there is some obstruction—that the organism is subject to some stimulus which produces a disturbance of psychic equilibrium. This view whereby an instinct may be said to be brought under "tension" is akin to parallel views found in the Gestalt psychology and among the psychoanalysts. At the same time, the conclusions of Marbe and Muller in the so-called "Wurzburg" experiments also tend to tie in with this view. In response to certain word stimuli, they noted that the subject under investigation "determined to react in the way required," and upon the stimulus word being presented, carried out instructions easily. To them it appeared as though the determination had set up an unconscious "determining tendency." In line with these experiments on thought and will, Ach brought about a conflict between "determining and associative" tendencies, in his efforts to measure the intensity of will by the strength of association possible to overcome. Subsequent investigations upon these points were made by Michotte and Prum, by Boyd Barrett in Belgium, and by Aveling and his pupils in England.[9]

[9] J. C. Flugel: *Hundred Years of Psychology* (Macmillan, 1933), Ch. III, pp. 233-240.

This experimental work, although approached from a different angle, seems in perfect agreement with McDougall's treatment of will in his *Introduction to Social Psychology* (1908). Considering the place of will in the general organization of instinct and the affective life, he defined volition as the "support or reinforcement of desire or conation by co-operation of an impulse excited within the system of self-regarding sentiment." Here, in words similar to those of Aveling, there is the same insistence on self, originally brought out by Ach. Aveling and Ach, however, made no attempt to relate the ego to moral factors, while for McDougall the "self-regarding sentiment" is the essence of morality.

Nevertheless, J. C. Flugel, in his *Hundred Years of Psychology* (1933),[10] sees an apparent vindication of this particular view of McDougall in the work of Spearman.[11] He calls attention to the fact that Spearman brought the findings of Ach and Aveling into relation with the studies of Webb, who revealed the existence of a general moral factor in charge, described as "consistency of action resulting from deliberate volition or will." Such a convergence, in Flugel's opinion, of four completely independent lines of work, "is one of the most impressive results that modern psychology has to offer." In each of these, the ego develops as a result of the complex interplay of experience and internal forces; the moral nature of man is explained in a manner agreeable to scientific methodology. The chief difference seems to be a matter of words—McDougall speaks of "instincts" and "self-regarding senti-

[10] Pp. 238, 239.

[11] C. Spearman: "General Intelligence Objectively Measured and Determined," *American Journal of Psychology,* 1904, XV, p. 201.

ment"; the others refer to drives, "determining tendencies," or "deliberate volition."

Indeed, nowhere is this more evident than in McDougall's clash with the strictly mechanistic behaviorists. His upholding of the term "instincts" has led Josey, Kantor, Kuo, and others to stress "reflexes" in opposition.[12] The main difference between them and McDougall on this point seems to be this: The behavorists consider "instincts" as simply the natural, biological equipment, owing nothing to experience; McDougall holds that instincts give us primitive desires and purposes which continue to express themselves in various ways until satisfied. He makes room for purpose, desire; they rule it out, substituting blind reflex movements, dependent upon recurrent stimuli. To them all complex behavior showing the effect of learning through experience can be explained entirely in mechanical terms. To McDougall, instincts are modifiable through variation in expression of a fundamental "urge" or conation. Both observe the behavior of the organism or "personality" as a whole, but differ as to the causes of the particular acts. Each seeks to inquire into the inner character of consciousness, whether instinct terminology or reflex language be used.

In further vindication of McDougall's long-continued opposition to reflexology and strictly mechanistic interpretations of behavior, it is a striking fact that recent ex-

[12] See Flugel, *op. cit.*, p. 274, referring to the following works: C. C. Josey: *Social Philosophy of Instinct* (1922); J. K. Kantor: "Problem of Instincts and Relation to Social Psychology," *Journal of Abnormal and Social Psychology,* 1923, XVIII, p. 56; Z. Y. Kuo: "Give Up Instincts in Psychology?" *Journal of Philosophy,* 1921, XVIII, p. 645.

perimental work in physiology and neurology have proved him right. Ever since Waldeyer's formulation of the "neurone theory" in 1891, physiologists and neurologists have been particularly concerned with studies of the general functions of the cortex in regulating human behavior and have abandoned any purely reflex explanation of activity. Franz, Lashley, Head, Holmes, and others have proved through arduous experiments that the cortex functions as a whole, and have set up the principle of equipotentiality.[13] The work of Sherrington, described in his *Integrative Action of the Nervous System* (1906), has become a classic on the interaction of the reflexes, and his showing of the important changes occuring in the transmission of nervous impulses via the synapse has been another great blow to the dogmatic assumptions of the reflexologists.

From the very beginning of the researches just mentioned, McDougall was foremost among psychologists to see the significance of the neurone theory for psychology. He was particularly interested in experimental study of the reflex arc in normal and decerberate animals and suggested early that the ultimate physiological equivalent of consciousness is to be found in the synaptic process. In his *Physiological Psychology* (1905), and in an important series of papers in *Mind*, *Brain*, and elsewhere, McDougall elaborated upon this point and developed a theory of inhibition by "drainage," supplementing Sherrington's theory of "reciprocal inhibition." According to McDougall's view, inhibition is always the negative aspect of a positive

[13] See Flugel: *Hundred Years of Psychology*, pp. 264-269.

process—the whole event involving a redistribution of energy rather than the prevention of something that might otherwise occur. "Although it has perhaps attracted less general attention than it deserves," says Flugel, "it is, almost beyond doubt, the most successful neurological theory that has ever been propounded." [14]

In the field of physiology, some recent experiments on the function of the brain furnish further evidence for the validity of the totalitarian point of view. Describing the nervous mechanisms in learning in the volume, *Foundations of Experimental Psychology,* Dr. K. S. Lashley proves that the performance of any action acquired or learned under training, does not depend upon any particular part of the brain cortex, as in the contention of the strict reflexologists. Contrary to their views that animal behavior is made up entirely of stereotyped reflex acts, Lashley shows that the attainment of a particular goal is achieved by means of very different means. In the volume, *Feelings and Emotions,* he describes in detail the violent display of emotional symptoms and bodily movements, characteristic of anger, on cats and dogs after the cerebral cortex has been removed. To him the most significant fact was the great intensity and volume of the general excitement which resulted when any one of the affective "centers" of the basal ganglia was aroused to action. This seemed to imply that the excitation of these centers results in an intense outflow along the visceral and somatic efferent nerves, as well as to the brain cortex.[15]

The conclusions of present-day physiology and neurol-

[14] *Ibid.,* p. 270. By permission of the Macmillan Company.
[15] For McDougall's comments on these experiments, see his *Modern Materialism and Emergent Evolution.*

ogy, that consciousness is a dynamic factor, and that behavior must be regarded in terms of the whole organism, coincide with the views which McDougall has elaborated in his "hormic" psychology.[16] No longer is consciousness considered a mere empty tablet which passively receives impressions from the outer world, but today mind is held to play an active part in choice and in directing behavior. Whereas most physiologists and neurologists are little concerned with applying this principle to human life, McDougall sees great significance in its application to society. According to McDougall, it is not merely through analytical study of the nervous system, the structure of the sense organs, or the varieties of sensation that we can study man properly. He is not a mere collection of tissues, neurones, and reflexes, but a thinking being, possessed of a mind which co-ordinates his manifold activities and makes of him an organic whole. Hence, the only way we can adequately study Man is to try to fathom the basis of this whole, this "personality," to note its distinguishable factors, their modes of functioning, and their development into the complex unity that is Man himself. Not simply how Man is constructed, but why does he behave as he does under various circumstances? This, for McDougall, is the question psychology has to answer.

In his attempt to answer this all-important question, McDougall formulated his now famous doctrine of instincts and their part in directing the behavior of human beings. Although disagreeing with this doctrine in many particulars, nevertheless a number of outstanding social psychologists today have undoubtedly been greatly in-

[16] See *Energies of Men* (Methuen, 1932).

fluenced by McDougall's views as to the relationship of psychology to society. This seems particularly true of the recent text on *Social Psychology* [17] by LaPiere and Farnsworth of Stanford, in which a sociologist and a psychologist have collaborated to advantage. In their conception of social psychology as "the study of the processes by which the human animal acquires from social experience the behavior characteristics which make him a socialized human being," they seem to be expressing in a slightly different way what McDougall himself has indicated in his *Introduction to Social Psychology* (1908).[18] LaPiere and Farnsworth shy at the term "instincts," but speak of "natural, innate, biologically determined attributes." Again, this seems to be a mere quarrel over words—for each appears to treat of the same thing—i.e., an attempt to study the reaction of the individual as a whole to the environment which conditions him. Despite their criticism of McDougall's use of "instincts," have LaPiere and Farnsworth been any more able to put their fingers on their "innate, biologically determined attributes"? Is not one set of terminology as normative as the other, based upon a priori reasoning? Both McDougall and the authors are concerned with the interaction between the individual and his environment; LaPiere and Farnsworth, however, stress the environment; while McDougall is more concerned with how, through purposeful behavior, the individual adapts himself to changing surroundings, to attain some definite goal.

McDougall looks upon human behavior as made up of

[17] McGraw-Hill (1936).

[18] See the Introduction, pp. 1-18.

a group of distinct, innate predispositions, which, though combined in many ways, yet are modified so as to result in complicated patterns that furnish the mainsprings of action. For other psychologists and social psychologists, these mainsprings are variously termed "drives," "incentives," "biological attributes," etc., but the meaning seems to be the same. For McDougall, society is not an entity to be explained in its own descriptive terms, but is rooted in the nature of individuals, whose interactions involve no laws beyond those of individual psychology. Refusing to deal with individuals as mere physical lumps bumping against one another, McDougall shows how the various parts of human nature are affected by definite social situations. In his stressing of the relationship between the cognitive, affective, and conative phases of instinct, McDougall has played a great part in demolishing the false notions of the classical economists, based on hedonism, that human action is governed entirely by a rational search for pleasure and avoidance of pain.[19]

Another important contribution of McDougall to social psychology is his treatment of the mental processes by means of which human beings are aware of their fellows and respond to stimulation from them.[20] Following up William James' view of "ideo-motor action"—that the idea of an act is a direct stimulus to the act itself—McDougall has taught that ideas lead to their fulfillment, provided they are not inhibited. This, in turn, led him to discuss the problem of suggestibility, one of the foremost questions at the present day. To account for the comparative sta-

[19] See McDougall: *Energies of Men.*

[20] See Gardner Murphy: *Historical Introduction to Modern Psychology* (Harcourt, Brace, 1932), pp. 293-295.

bility of the "personality" in the face of constantly changing stimulation from the outside, McDougall has described the complex mechanisms which go to make each individual a social self. Above all the conflicting social influences, he sees the "self-regarding sentiment" which makes possible the identification of the self and giving to individual life a certain coherence and consistency.

In line with his views upon the purposive nature of mental acts, McDougall sees significant points of agreement between his "hormic" psychology and the writings of the younger Gestaltists. This is particularly true of their use of the term "closure" as an explanation of certain acts. The tendency of any action toward a goal the Gestaltists consider a tendency to "closure"—this is, resumption of a position of equilibrium between the physical and mental factors. They recognize the value of "insight" in the learning process, notes McDougall, but are unwilling to grant the presence of "foresight." Like Rignano's ingenious scheme of "mnemonic causation" (elaborated in his *Nature of Life*)[21] obedient to the laws of "energetics," this doctrine of the Gestaltists seems to straddle the fence between mechanism and teleology. In McDougall's opinion, however, were they to explain what they mean by "insight" and "closure," quite probably we would find that they really do recognize the causal efficacy of mental factors in behavior. Whether this be the case or not, it is true that Dr. Kurt Lewin, one of the leaders of the Gestalt School, has expressed conclusions quite in agreement with McDougall's. Recognizing the inadequacy of the atomistic explanations of association psychology,

[21] Harcourt, Brace (1930).

he feels that to understand any action aright, we must seek the sources of mental energy involved. In his more recent book, *Principles of Topological Psychology* (1936),[22] Dr. Lewin gives a systematic treatment of the totalitarian point of view, based on mathematical principles. Hoping to unite the different fields of psychology through "topology"—space and time relationship—he states his case admirably for dealing with persons as a whole, as opposed to the old psychology of sensation that left out ideals, ambitions, and various social relationships.

Another group of psychologists who stress the teleological factors in consciousness and uphold the totalitarian viewpoint are the psychoanalysts, followers of Freud, Adler, and Jung. Of these, the Freudians, although speaking in terms of "mental mechanism" and "strict determinism," yet act upon the assumption that all mental activity, conscious or unconscious, is sustained by impulses toward goals. Similarly, the followers of Adler, through their principle of "compensatory effort," imply a definite recognition of the influence of mental activity in overcoming functional disorders. The teachings of Jung seem even more frankly purposive than either of the others. Laying stress upon the difficulties that lie before the patient, the psychoanalyst sets forth a definite means of overcoming them. Like McDougall's "self-regarding sentiment," for the Jungians, the mainspring to human strivings is some type of life-energy which may be used to develop the personality and stability of character. Different as these three groups of psychoanalysts may be in other respects, all at least are in harmony with Mc-

[22] McGraw-Hill (1936).

Dougall's views on the close relationship of the cognitive, affective, and conative desires.

In his emphasis upon the study of Man as a whole, and not as mere collocation of atoms having no connection, McDougall may be said to epitomize the teachings of present-day psychology, which is rapidly discarding the narrow views of the dogmatic reflexologists. For McDougall, however, his hormic psychology has implications far beyond the immediately related fields of physiology and biology, but is of vital significance to the various social sciences. If anyone is inclined to feel that the acceptance of this or that psychological doctrine makes little difference to society, let him, says McDougall, take a brief glance at the recent history of social science. Under the Mid-Victorian psychology, which confined its attention to introspective analysis, ethics, political economy, political science, and jurisprudence, he argues, fell into errors of thinking from which they have not yet entirely recovered. In ethics, for example, he feels that a false psychology has been responsible for the pernicious doctrines of hedonism and utilitarianism. These, in turn, gave rise to vague conceptions of a "moral law" or "moral instinct" as the basis of human conduct which persist to this day. Furthermore, says he, society has suffered from the "reasonably prudent man" doctrine of economics which has presumed man to be guided in all his activities by an enlightened self-interest. Likewise, numerous inhumanities have been inflicted upon criminals as a result of the belief in a psychological doctrine that failed to consider the importance of the conditioning factors in their environment. As against these "false" psychologies, McDougall offers his dynamic view—that only by a careful study of the emo-

tions—the fountainhead of human behavior—can we ever hope to improve the lot of mankind and make the world a better place to live in.

Only by such study, indeed, can we hope to find the answer to the great question: What is man, that Thou art mindful of him? "Only in so far as psychology brings us nearer to an answer to that question," says McDougall, "can it justify its claim to share in the preparation for life, and to make an indispensable contribution to every discipline concerned with human culture and activities."

CHAPTER III

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Chapter IV

PSYCHIC RESEARCH—A CHALLENGE TO MECHANISM

The findings of psychic research today reveal still further the fact that there are "more things in heaven and earth than are dreamt of" in mechanistic philosophy, and are forcing recognition of the inadequacy of purely mechanist explanation of certain kinds of phenomena. Whether they like it or not, in light of recent evidence, the mechanists must admit that the psychic researchers have uncovered some facts dealing with the mind's influence that cannot be dismissed with a wave of the hand or an outburst of scathing denunciation. It has even been predicted that the findings of psychic researchers may do for the present age what the researchers of Faraday, Newton, Darwin, and Huxley did for the nineteenth century. At any rate, the study of mind is receiving a new impetus that will undoubtedly have far-reaching consequences upon the future development of psychology and medicine.

Scientists still speak of mechanistic acts and "predisposing causes," but whenever they aim to produce changes in the world, they must calculate the effects to be produced through the intellect. This calculation itself is only a tool; reality, in which our duties and real aims lie, is itself outside this construction. Medical men have to adjust their work to the casual aspect of man in order to cure disease. But even they recognize the efficacy of the mind as an important factor in this regard, that the realization of casual ends in itself binds them to a world of purpose.

PSYCHIC RESEARCH

The traditional attitude of science has been one of antagonism to the claims of psychic research, but a large number of scientists who have looked into the evidence, have found the facts unassailable. Those who scoff most at psychic research appear to be ignorant of its vast extent. The proceedings and journals of the Societies for Psychic Research alone comprise more than a hundred volumes of material to say nothing of the hundreds of other books published on the subject.[1]

Few critics of psychic research have made a thorough and exhaustive examination of psychic phenomena, and assured themselves that all alleged evidence for it rests on illusion or fraud. Yet they dogmatize against it at great length as if they had spent years in painstaking efforts to unearth the facts.

Many who dismiss psychic phenomena without even trying to investigate their reality seem to hold that only the mechanistic conception of the world is true; others are hostile because of what they assert is the wholesale character of the fraud which has accompanied psychic phenomena. Even then, however, they are still under obligation to encourage the investigation into purported facts. For only by a well-organized and long-sustained investigation into the phenomena can it be proved whether or not they are spurious. The conclusions of mechanistic scientists and other like-minded critics of psychic research have too often ignored the phenomena, or assumed their nonexistence. This is hardly the attitude for Science to take when it prides itself on being open-minded, and such sci-

[1] See H. E. Carrington: *Story of Psychic Science* (Washburn, 1931); also Bibliography in John E. Coover's *Experiments in Psychical Research* (Stanford University Press, 1917), pp. 551-616.

entists are, indeed, as unscientific as they accuse the psychic researchers of being.

Ever since the founding of the British Society for Psychic Research, in 1882, by a group of the most intellectual men of the day, the favorite taunt of scientific opponents has been that such men were all victims of a "will to believe." But if one will take the trouble to examine the purposes for which the Society was organized, he will see that it was founded upon a hard-headed intention to sift the facts. Those who accused such men of being victims of a delusion seem willfully ignorant of the painstaking investigations which a special committee of the Society undertook to fathom the evidence for psychical phenomena. Granting that they did have a "will to believe," were they any different from such men as Columbus, Ericson, Balboa, or Byrd? The discoveries of these men and researches of Galileo, Kepler, Newton, Faraday, Darwin, and others were all based on this "will to believe," the belief that there was something more beyond what their senses revealed to them.[2]

The average critic of Psychical Research bases his criticism on hearsay evidence of those who have themselves not taken the trouble to investigate the facts. Yet, he is in no position to judge until he has made some effort to sift the evidence by consulting at first hand the publications of the various Societies of Psychical Research and a few outstanding books on the subject of psychic phenomena. Strange to say, few critics seem aware of the fact that

[2] In this discussion of the various criticisms directed against psychic research, I am particularly indebted to Walter F. Prince: *The Enchanted Boundary* (Boston Society for Psychic Research, 1934).

every objection which they advance has already been discussed at great length by researchers themselves; that the majority of exposures of fraud have been made by members of such societies; that ordinary, normal explanations have been pressed to the utmost before admitting the supernormal character of the phenomena. There is hardly a point that has not been thrashed out for sources of error time and time again.

Critics further show their ignorance of the issues involved when they repeatedly refer to psychic phenomena as "supernatural." Psychic research does not deal with the "supernatural," but investigates what may be better termed the "supernormal"—that is, unusual, extraordinary, not "supernatural" at all, for if any phenomena exist, they must necessarily be "natural"—i.e., obey their own laws. Psychic phenomena, then, are really opposed to the laws of nature, but are assumed to be other forms of energy, governed by other laws.

Scientists have claimed that psychic phenomena are "impossible," contrary to the laws of nature, and destructive of the principles of the ("their," preferably) universe. They seem to forget that there may be other phenomena not subject to "natural" laws, but have laws of their own. Has Science, after all, been able to distinguish between the possible and the impossible? Is not the history of Science replete with instances of discoveries and behavior formerly thought "impossible"? To cite only a few examples[3]: Hypnotism was long regarded as "impossible," the essence of humbuggery; anesthesia was denounced by medical men as "contrary to the laws of nature"; the automobile, the

[3] See Prince: *Enchanted Boundary.*

radio, the aeroplane, the submarine, and numbers of instruments and devices now commonplace were also considered "impossible" at one time; Newton's laws, considered unalterable, have given way before the researches of Einstein; the law of indestructibility of matter, before the painstaking investigations of such physicists as Jeans, Eddington, and others; Röntgen rays were first denied by scientists because they did not fit into their pre-existing theories—so was Radium thought "impossible" because it seemed to undermine the fundamental law of conservation of energy. In truth, the more we deal with psychic phenomena, the more we realize that we are brought face to face with strange facts and new forms of energy hitherto unknown. Yet, as in the case of other strange facts, what is thought impossible today in the field of psychic phenomena tomorrow may be a part of the regular order of things. It has already been possible to fit new facts into the body of science to really become a part of it. So it will be with psychic phenomena. Even if some fundamental principles have to be modified, this newly gained experience will add that much more to the sum total of human knowledge.[4]

The facts of psychic research are available to anyone who will take the trouble to see for himself. In such a short space as this, it is not possible, of course, to do more than cite merely representative samples of the great mass of evidence existing. We shall confine our attention here to telepathy and clairvoyance as demonstrating the evidence for phenomena not explainable by the ordinary physical laws.

[4] Cf. Carrington, H. E.: *Story of Psychic Science* (Washburn, 1931).

The word "telepathy," coined by F. W. H. Myers, one of the original founders of the British Society for Psychic Research, has come into general use today in place of the former term, "thought transference." It has been defined as the "communication of impressions of any kind from one mind to another, independently of the recognized channels of sense." Mind-reading, strictly speaking, means reading the thoughts of another person; thought-transference, the voluntary, or involuntary, transference of thought from sender to receiver.[5]

Thousands of experiments have been conducted, in which attempts have been made to convey from one mind to another images of playing cards, figures, numbers, diagrams, emotions, sensations of pain, scents and perfumes, visualized pictures, and many other impressions. Experiments have been tried with agent and percipient in the same room, in different houses, in different cities, and in different countries, thousands of miles away. In most instances the most rigorous care was invariably taken to avoid all possibility of fraud, trickery, or collusion. Due allowance was made for unconscious movements and expressions, unconscious whisperings, or chance coincidence.

In these experiments, the subjects were not in contact, ofttimes being widely separated; often they did not know one another; frequently, investigators acted as agent or percipient—in fact, every normal channel of communication was effectually barred. Mathematically, the successes were far more numerous than chance-coincidence could account for. Some casual influence was thus shown

[5] "Mind-reading" ofttimes involves unintentional use of signs and signals, the use of cues, although the subject himself may be unaware of it.

to exist, whereby a distant, living mind was influenced by some other mind, otherwise than through the sense channels. From these experiments telepathy has been given a certain positive degree of probability, and the fact of its existence is now generally recognized, although some psychic researchers regard telepathy as not yet proved.

In the presence of a medical commission of some of the leading minds in Germany, several years ago, Dr. Rudolph Tischner carried on a series of experiments in telepathy and clairvoyance which have become a classic work on the subject. In his *Telepathy and Clairvoyance*,[6] he details at some length the results of these experiments, with the three mediums, Miss Von B., Mr. R., and Mr. H. The first series of experiments, carried on with the aid of Dr. V. W. Wasielewski, dealt with telepathy, the second group with the interesting phenomena of "psychometry" or "psychoscopy." The experiments were carried out as follows: Dr. Tischner put a three-paneled screen covered with a thick rug around three sides of his writing-table chair. The rug acted as a roof and hung down the sides so that it was impossible to see anything through the chinks in the screen. The table at which Doctor Tischner and Wasielewski sat was some twelve feet behind the back of this chair. Miss V. B. sat down while the Doctors Tischner and Wasielewski adjourned to a distant room on the same landing. Later they went upstairs to a bedroom where they chose the objects, pausing in several other rooms on return so as to make it impossible for the medium to know in which room they had chosen the objects for the experiments. The utmost pains were taken to prevent fraud of any sort.

[6] Harcourt, Brace (1925).

As a result of these experiments, Miss V. B. guessed correctly that they had chosen a pair of scissors, a violin, a flask of water. In another experiment with a Miss S. she correctly reproduced a drawing which Tischner had handed to a friend in the same room, although obscured from the medium's view.

Following these, Doctors Tischner and Wasielewski carried on a series of experiments in clairvoyance with Miss V. B. Before the arrival of the medium, they collected a large number of post cards from his correspondence, made a packet of them, and locked them up in a writing table. Upon Miss V. B.'s arrival, Doctor Tischner took out a card, without looking at it, and wrapped it up in a piece of heavy black paper. He then put this into a thick purple-lined envelope, sealing it five times with violet sealing wax. The medium then lay down on a couch and a lighted candle was put on a chair beside her; then she was given the sealed envelope, a pencil, and a piece of paper, after which they left the room, switched off all lights, and left the door ajar behind them. To insure accuracy, they peeped at intervals into the room, but found no suspicious signs. When they returned, they found the medium still lying on the sofa, holding the sealed envelope to her head. She handed it to Tischner, together with a piece of paper on which she had written a few words. The envelope seals and seams were unaltered, and the envelope was not crumpled. On one side of the paper they found an accurate reproduction of the message on the card, and description of the picture on the card in question. A similar experiment tried with another card brought identical results—the medium reproduced the writing quite accurately. In another experiment with

clairvoyance, Miss V. B. successfully revealed the contents of a small cardboard box containing cotton wool.

Even more interesting, however, than the telepathic experiments were those "psychometric" or psychoscopic experiments. Psychometry, Tischner explains, is the faculty possessed by certain mediums of obtaining supernormally the knowledge of events and scenes connected with objects with which they are in contact, or relation, or of the owners, or other people connected with these objects. These descriptions may refer to the past, present, or future; they often deal with the surroundings, or again feelings of the owner or people associated with him or the object. They consist often of mixtures of clairvoyance in space, visions of the past, "soul-reading," and telepathic influences. Tischner's experiments on this score constituted the first series of scientifically conducted experiments on psychology published in Germany.

In one of these experiments, Tischner reports, Miss V. B. was given a small heart-shaped dish, which had been presented a number of years previously to a group of ladies at a particular wedding. Upon receiving the object, Miss V. B. gazed into a glass filled with water, and proceeded to describe with accuracy the circumstances connected with the gift of the dish. She gave a similarly accurate description of the circumstances connected with a balance which Dr. Tischner had received from a lady several years previously.

Subsequent experiments with a Mr. H., a well-educated man of forty-two, were equally as significant as those with Miss V. B. Space does not permit us, however, to mention more than one of these interesting cases. In

this instance, Mr. H. was handed a small oval looking glass, wrapped up in a thick paper. This glass had been given to one of the experimenters by a young widow whom he had met at a watering place, where he had stayed as a soldier. Upon this object H. made the following observations: "A looking glass, a woman's hand—a picture in the looking glass, a small oval pastel—something gray—a girl's face, a brunette, a field-gray uniform, the lady is young, under thirty—a warm shake of the hand, a parting—a bouquet for the gentleman—a painted photo —a parting gift for the journey—parting, sadness."

This account tallied accurately with the actual facts in the case. The lady was twenty-eight, brunette; the range and intensity of their feeling was described with great accuracy; the glass had been given to him with the wish that he should think of the donor whenever he looked into it. Other experiments made with various objects brought up a chain of thought before the medium, who likewise accurately reproduced the actual sequence of events connected with them.

In an earlier series of experiments with telepathy and clairvoyance, however, at Stanford University, Dr. John E. Coover was unable to find what he considered positive evidence of these phenomena. For the test of thought-transference he used the guessing of lotto block numbers and playing cards. In both cases, interesting results were obtained, but gave no indication of the operation of what has since been termed "extrasensory" perception. In the experiments with lotto block numbers, Dr. Coover states that the number of successful guesses is not beyond either

experimental or theoretical probability; that no particular distance was more favorable than another.[7]

As for the experiments with playing cards, the statistical analysis of results of a thousand trials with psychics, according to Dr. Coover, revealed no advantage over normal reagents as claimants for capacities of either telepathy or clairvoyance. Some of the deviations, it is true, seemed for some cause beyond chance, yet they were matched by chance deviations and fell considerably below the limit of chance deviation. He found no essential difference between psychics and normal subjects in the forms of experience which contributed certainty to judgment.[8]

Be that as it may, Dr. Coover feels that the meager evidence for alleged psychic phenomena need not preclude scientific investigation of them. "It is no adequate defense to claim," says he, "that science has no time to go out of its way to combat the superstitions and prejudices of men; for no matter to what extent superstition and prejudice may be supported by these alleged phenomena, the phenomena are initially accepted because it is believed they have been repeatedly observed by trustworthy, even eminently qualified observers. . . . The obligation of science to the public, in respect to these matters, is heavy, and is becoming increasingly greater." [9]

Following similar procedure, Dr. C. H. Estabrooks carried on a series of experiments in telepathy and clairvoyance at Harvard during 1925-26.[10] His subjects were

[7] *Experiments in Psychical Research* (Stanford University Press, 1917), p. 46.
[8] *Ibid.*, pp. 142, 143.
[9] *Ibid.*; Preface, p. vii.
[10] *Contribution to Experimental Telepathy* (Boston Society for Psychic Research, 1927).

told literally to guess the cards used, and each percipient was instructed to write down the first card that flashed into his mind at each click of the signaling apparatus. These experiments were carried on in a double room, the inner room separated from the main one by double doors. Both these doors were closed during the experiment, while the operator sat in the outer room with the other subjects. One subject was instructed to act as the battery by concentrating on the cards as they were turned up. The operator then shuffled the deck of twenty-one cards, keeping them face down always. The deck was then cut with a penknife and the top card chosen. This was turned face up on a white sheet of paper lying on the table in front of the sender. The pack was then reshuffled, and at each signal the pack was again cut and the next card substituted for the first, which was returned to the deck. This procedure was repeated until all the twenty-one cards had been sent.

In three series of experiments, Estabrooks' results were well ahead of chance, and are, therefore, not explainable merely by coincidence. These experiments of Estabrooks, carried on with perfectly normal individuals, are of particular interest as being in direct opposition to the theory of his predecessor at Harvard, Professor Gardner Murphy, who held that telepathic experiments should be carried on only with persons known to possess peculiar psychic powers. From 1922 to 1925, while he held the Hodgson Fellowship in Psychical Research at Harvard, Professor Murphy spent about half his time in search of individuals who claimed to have telepathic gifts. He has since seen the value of Estabrooks' methodology, and realizes the necessity of limiting his hypothesis to factors in the situ-

ation which can be approached statistically and experimentally.

Following the lines marked out by Estabrooks, the recent investigation of Extra-Sensory Perception by Dr. J. B. Rhine, at Duke University, are perhaps the most conclusive evidence for the existence of telepathy yet found.[11] Rhine began his experiments with sealed-envelope guessing contests on his college classes, with the help of his colleague, Dr. K. E. Zener, using numerals, or letters of the alphabet. The most outstanding experiments, however, were made with "Zener" cards, made up of five symbols: circle, rectangle, plus, star, and wavy lines. These were made up in packs of five each, twenty-five in all. The subjects usually called the top card, as the pack lay face down. A series of twenty-five, based on pure guesswork, would yield, on the average, about five correct hits. But these odd tests yielded around six. Out of a total of 800 trials, 207 hits were recorded.

But this yield was low compared to the record of a special subject, A. J. Linzmayer. Late in May, 1931, he was given 45 card-guessing trials in very light hypnosis and called 21 correct as against chance expectation of 9. Before leaving school at close of year, he brought his total trials up to 600 for regular test, with another 900 for special test. The 600 yielded 238 hits, a positive gain over chance of 118. "This figure can leave no intelligent person in doubt of a significant principle," says Rhine.

The greatest event of the academic year 1931-32, according to Dr. Rhine, was the work of C. E. Stuart. Trance was used sometimes in the trials, with a combina-

[11] Related in *Extra-Sensory Perception* (Duke University Press, 1934), on which this discussion is based.

tion of telepathic conditions. Out of a total of 1,045 trials, made on fifteen students, using geometric figures in about half the trials, with a chance expectation of 99 in all, his subjects actually got 147 correct. Meanwhile, Stuart added to this work about 900 more, yielding 257, or 77 above chance. Experiments with one, Hubert Pearce, Jr., who made 2,250 trials in card-guessing, yielded 869, or 419 above chance.

A particularly interesting feature of the Pearce experiments was that his score dropped when any one tried to help him by looking at the cards. Then the observer worked behind a screen so that he would not know when he did or did not look. For a while the score remained about the same, until Rhine (observer) quit looking at the cards. Shortly thereafter, under this pure telepathic test, the score shot way up. His first 950 trials yielded 269, or 79 above chance.

These experiments were interesting enough, but the most startling results were obtained at a distance. One of the first series of such experiments was carried on with a subject named George Zirkle, who did quite as well twenty-five feet away, with a wall intervening, as he did across the table. In fact, Rhine indicated that the scores were better with the distance, and when the observer was behind the screen. The average per 25 in the same room was 14; at a distance of 8 to 12 feet, it was 14.6; and 18 at a distance of 28 to 31 feet.

Even more significant results were obtained through a series of long-distance experiments in Extra-Sensory Perception from Lake Junaluska to Durham, North Carolina, a distance of more than 250 miles. These results seemed

to prove that telepathy was more effective at a distance than in the same room, all other conditions being equal.

Since distance seems no barrier either to pure telepathy or pure clairvoyance, what about time? asks Rhine. Can these subjects evade that dimensional factor also? "Only that factor itself," says Rhine, "has kept us from attempting to find out, but it cannot long do so now."

In summarizing these series of experiments, Rhine holds that on the basis of this work alone Extra-Sensory Perception is an actual and demonstrable occurrence. Because all major subjects had virtually the same results in telepathy and clairvoyance, were affected similarly by drugs, function with considerable distances between sender and receiver, he feels that these two phenomena deal with a common underlying process, not explicable by ordinary physical means.

He disagrees with those who would explain the phenomena by physical wave theories. In his opinion, the wave theory seems inapplicable to the results, in view of the distance experiments and the absence of any decline of results, with distance. The assumption that the wave-theorist must make, that the ink-figure would radiate the same waves as the active mind of the agent, appears to him fantastic. Telepathic communication ought, on that theory, to give a hopeless jumble of waves. These and other difficulties compel him to reject the wave theory, the only type that modern physics has yet to offer.

The results of his telepathic experiments at a distance lead Rhine to believe that in Extra-Sensory Perception the mind is free from the common relations of extension or distance. This seems to indicate the "de-materialization" of mind operating under these conditions. This

point is particularly important both to psychology and philosophy, as bearing upon the question of the body-mind relation, upon personality-survival, and some of the other questions in the natural philosophy of mind.

Psychic research and experiments in telepathy, though carried on under the strictest conditions, still meet with a considerable measure of incredulity, and even hostility, from those who presume to know, without experiment, that such things as they indicate simply cannot be. This hostility, however, is beginning to show signs of decline, for little by little the scientific world is turning an open-minded, if cautious, inquiry toward the facts.[12]

Within the last ten years particularly, there have been many features contributing to popular interest and enlightenment: Broadcasting telepathy experiments by radio in England and America; the study of psychic phenomena by leading psychologists in various countries, popular tests for telepathy conducted by the *Scientific American;* and the various psychical research societies now existing in all parts of the world.

At the same time, it is interesting to note that a number of leading academic institutions are beginning to devote time and study to psychic research. It is well known that Henry Siebert left an endowment some time ago to the University of Pennsylvania for the study of psychic phenomena, although the results to date are mostly negative; Stanford University has a large endowment for psychic research, and under the leadership of John E.

[12] Official science is still skeptical about the Rhine experiments, for most subsequent investigations have been carried on by those trained in the methodology used at Duke. Many more independent types of experiment, under varied conditions, appear to be necessary before scientists in general accept the evidence as conclusive.

Coover has conducted careful investigations in telepathy and allied phenomena; the experiments at Harvard University and at Duke we have likewise noted; while perhaps the most outstanding instance of concerted academic interest in the subject of psychic research is furnished by the symposium carried on at Clark University, in 1925. It is true that in the preface to the volume, *Case For and Against Psychical Belief*, Dr. Murchison disclaims any necessary leaning toward the phenomena, nevertheless this is a far cry from the period not so long ago when even the taint of favoring investigation of alleged psychic phenomena was enough to ruin an academic career.

As a further instance of the advances that have been made toward the recognition of the validity of psychic phenomena, we find on the Council of the present-day Boston Society for Psychic Research such illustrious names as Gardner Murphy, Professor of Psychology at Columbia University; Dr. William McDougall of Duke; Dr. Frederick Peterson of Columbia (M.D.); Walter F. Prince; Dr. Francis L. Strickland; and Dr. Elwood Worcester. Like the original British Society for Psychic Research, the Society was founded in order to conduct psychic research according to strictly scientific principles, and has no preconceived notions one way or other regarding the alleged phenomena under investigation. Psychic Research societies have continued to attract men of the highest order, and a study of the names of their members should silence once for all the ridiculous statement that these men are all victims of a "will to believe."

Granting, however, that these various societies have been formed for the investigation of psychic phenomena, one may well ask: What is the good of all this? How will

this benefit mankind? Is it not a waste of time? It is quite true that no money can be made out of these investigations, except by quacks and charlatans, but the chief importance of psychic research lies in its philosophical bearing. Not what psychic phenomena can teach us about the other world, but what it can teach us of the place of human personality in nature and what the natural capacities are that determine that place. Professor Rhine, at least, feels that the study of the unknown and unrecognized features of mind promise more of such "philosophical fruit" than any other inquiry he can conceive of. By a cautious study of the unusual, says he, "we come most readily into an understanding of the more usual and common."

Likewise, it is assumed that the facts of telepathy and clairvoyance will shed new light on the old philosophical problem of the mind and the body relation. Seemingly, this process takes place without any changes in the brain. Therefore, psychic research may have tremendous significance for philosophy, psychology, metaphysics, and even medicine—especially for neurology and psychiatry.

In addition to the philosophical aspects of psychic phenomena, they have already had important practical effects upon medical science. Numbers of specialists in mental therapeutics today were directly inspired by the findings of psychic research. Psychical researchers such as Janet, Hyslop, and others have done much to explore and enlarge the boundaries of the subconscious mind. The term "subliminal" itself, which psychologists use constantly as applied to consciousness, was coined by Myers, psychical researcher. And again, psychical research has contributed the oft-quoted Ansil Bourne case of dual per-

sonality, the Doris case of multiple personality, and the Heinrich Myer case of abnormal psychology.[13]

Indeed, in the opinion of E. J. Dingwall, formerly research director of the S. P. R., there is at the present time a gradual movement amongst scientific men toward a cautious survey of the field covered by psychical research. "The psychologist sees a new aspect of mind when he considers the phenomena of trance, the 'control' of the veridical vision. The physicist asks himself whether light may not be conceivably thrown upon the more obscure problems of matter and electrical energy . . .; the biologist is privately curious as to the possible bearing that teleplastic mediumship may have on the problems of life; whilst the philosopher is vaguely disturbed at the intrusion of the subjects into a domain hitherto abandoned for the most part to speculation untinged by empiricism." [14]

Science has attacked the experimental evidence for telepathy and clairvoyance as a natural enemy, but the facts are untouched by whatever theoretical views of the universe one chooses to adopt. Now that the facts of telepathy and clairvoyance are gradually becoming recognized, scientists may have to accept them, whether or no, and attempt to bring them into relation with other phenomena with which they are more familiar. The refusal to inquire into these occurrences should break down when it is seen that far from contradicting and invalidating facts already acquired, they merely supplement and enrich what has already found a secure place in the edifice of science.

[13] See Gardner Murphy: *Historical Introduction to Modern Psychology* (Harcourt, Brace, 1929).

[14] Introduction to Rudolph Tischner's *Telepathy and Clairvoyance* (Harcourt, Brace, 1925).

CHAPTER IV

SUGGESTED LIST OF READINGS

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Chapter V

LAMARCKISM AND ITS PHILOSOPHICAL IMPLICATIONS

Another interesting phase of the body-mind controversy of the present day is the revival of interest in the once popular theory of inheritance of bodily modifications, or acquired characters. Despite continued attacks upon and ridicule of Lamarckism, this theory still lives and is ardently supported by those who are dissatisfied with the purely mechanical explanation of organic development advocated by August Weismann and his disciples. Regardless of the truth or falsity of the theory, its opponents have been forced to give renewed attention to the well-known fact that the organism is an active, self-assertive, self-adaptive being, to some extent master of its fate.[1]

Whether acquired characters, or bodily modifications, can be transmitted to offspring is an age-old question which has been keenly debated for over a hundred years, and to the discussion of which innumerable books and pamphlets have been devoted.[2] Lamarckism has numbered

[1] See J. Arthur Thomson: *Heredity,* p. 172 (Murray, 1926). Ch. VII gives an interesting summary of the present status of Lamarckism.

[2] As representative samples of current discussion of the arguments pro and con, see the following: T. H. Morgan: *Scientific Basis of Evolution* (Norton, 1932); Gladys C. Schwesinger: *Heredity and Environment* (Macmillan, 1933); S. J. Holmes: *Human Genetics and Its Social Import;* H. S. Jennings: *Genetics* (Norton, 1935); Michael Guyer: *Being Well Born.*

among its supporters such illustrious names as Buffon, Haeckel, Spencer, and Wilhelm Wundt, while today its possibilities are being reconsidered by zoologists, naturalists, psychologists, and philosophers. The question as to the inheritance of acquired characters as a result of changes in environmental influence is not merely a technical problem for scientists, but is of deep significance to philosophy, the social sciences, and particularly to educational theory. It has been well said that if the particular learned responses due to education and experience do not directly affect the inherited nature of the offspring, there must be a revision of many current pedagogical and psychological opinions.

Until recently, the majority of scientists denied the possibility of inheritance of acquired characters, while most textbooks on heredity and eugenics have either opposed Lamarckism or ignored it altogether. This coolness to the Lamarckian theory has been a natural one—a reaction against the fables relative both to the inheritance of acquired characters and to the theory of spontaneous generation, current during the nineteenth century. When such stories as the inheritance of a bobbed tail by the progeny of the bull whose tail had been cut off in the barn door, or that of the progeny of the cow with the crumpled horn, ran rife throughout the land, it is not strange that many scientific investigators threw the whole theory overboard. Another reason, perhaps, why many scientists are still opposed to the theory of inheritance of modifications, is that the acceptance of this theory might disturb the neat and well-ordered scheme of evolution which they have built up. The assumption of Lamarckism would demand a reordering of their entire process of thinking;

they would have to study the living being in its relation to the outer world, not as a self-contained entity, predestined to a certain set behavior throughout its life. But a more specific reason for the general scientific disdain that has prevailed is no doubt the remembrance of certain faked experiments, purporting to show evidences for inheritance of acquired characteristics.

Be that as it may, renewed interest in the Lamarckian theory is developing on various fronts by reason of a counterreaction to the dogmatism of the Weismann school.[3] Little by little it is being felt that Mendelism does not tell the whole story, and that the theory of exact inheritance of Johannsen or the mutation theory of DeVries are inadequate for the explanation of the manifestations of the descent of races, species, groups.

The controversy between the neo-Lamarckians and their opponents hinges upon the question of the causes of organic evolution.[4] The first group hold that organic evolution results from purposeful adaptation of individual and species to varying environmental conditions. The second worship natural selection as the governing factor responsible for the organic variables produced. They are willing to ascribe the causes of variation to almost anything but purposeful adaptations.

But the Weismannites need not shy at the expression, "purposeful adaptation." Such a hard-headed thinker as

[3] See August Weismann: *The Germ Plasm* (Scribners, 1893), especially Ch. XII; *Evolution Theory,* Tr. by J. A. Thomson, 2 vols. (Arnold, London), especially Vol. I, Lecture XXIII; also compare *Weismann on Heredity,* by Poulton, Schonland, Shipley, Vol. I (Clarendon Press, 1891).

[4] See Leon A. Fox, M.D.: *Teleological Factors in Evolution* (Waverly Press, 1933).

Dr. Morris Cohen has argued for the soundness of the teleological interpretation of certain occurrences in nature, indicating that it need not have any metaphysical connotation.[5] "Purposeful adaptation" would simply mean the development toward some specific end. In Lamarckian terms, it refers to the use that stimulates and develops, while disuse destroys organs in the species. This is the essence of Lamarckism—that function determines structure and is the cause of variation.

All scientists today agree that variations or mutations occur, but disagree as to just *how* they take place. They have been observed in the laboratory, in the animal world, and in practical breeding of horses and cattle. The geneticists have given us a clear understanding of the way in which genes are transmitted in the creation of special strains. They have offered a clear explanation of the mode of transmission of hereditary factors, including changes observed in hybridization and mutations. Yet the theory of loss or alteration of genes does not account for adaptative changes—we must go beyond the genetic explanation. Additional factors are required to explain the creation and adaptation of the functioning organs that make the living individual *react as a whole* to the environment. Is not this the Lamarckian theory?

Contemporary scientists of the Weismann school have expressed views concerning "Lamarckism" which hardly do justice to what Lamarck actually considered to be the cause of organic evolution. They have accused him of the ridiculous belief that the animal, by wishing, might change its structure. Lamarck does refer to the needs

[5] Lecture notes taken by the writer at Stanford University, July 6, 1937; see also *Reason and Nature,* Book II, Ch. 3.

of the animal to meet special environmental changes. But he did not teach that the need creates the wish; the wish, the organ. He assumed that changing environment produces new needs, new requirements; from these new requirements new habits develop, and these in turn differentiate very slowly into new structures. He set no time limit upon such changes, but indicated that it must necessarily be an exceedingly slow process. It was not Lamarck, we must remember, who cut tails off mice or carried on other such mutilations, expecting results within a short period.[6]

Weismann's followers deny the impossibility of the inheritability of the effect of use and disuse on two main grounds: They cannot picture any mechanism by which the change in an organ could be represented by a change in structure of the germ cell; and that the experimental evidence is either insufficient or biased. The first objection assumes that the nucleus of the germ cell is a kind of machine, with parts working in fixed relation to another; that somehow this machine by its action produces the organs of an adult animal in their typical arrangement. Examination of this theory by competent scientists has revealed that this is simply the old eighteenth-century theory of "preformation" in disguise. This theory has been disproved by the experimental researches of Driesch and Hertwig, who have shown that the nuclei in the developing embryo can be shuffled about like a handful of marbles, and that this arrangement produces no effect on the course of development. The mechanical picture of the germ cell has not stood up under investigation, and

[6] Cf. Fox, L. A.: *Teleological Factors in Evolution.*

the neatly built scheme of the Weismann school must undergo drastic revision.[7]

The second objection—lack of proper evidence—is well taken, but just because incontrovertible proof of Lamarckism is difficult to obtain in the laboratory, opponents of this theory are not justified in denying categorically that evidences of Lamarckism do not exist. It is true that little positive evidence is obtainable under strict laboratory conditions; yet if we would really get at the essence of Lamarck's teaching, it would seem folly to attempt to produce evidences of transmission of acquired characters within the very short time and under the meager conditions that the laboratory affords. The best place to observe the workings of the Lamarckian theory, some Lamarckists feel, is in the practical breeding of registered stock and fine horses. Perhaps this is not "scientific," but almost any breeder of long years experience will testify that Lamarckism is an everyday occurrence, so to speak—they can cite ample evidence of the working of adaptative changes.

In further answer to the argument that insufficient evidence exists, it is interesting to note that within the past two decades a number of experiments have been carried on in the laboratory, purporting to show evidences of the inheritance of acquired characters. Unfortunately, some of them have not checked their results carefully enough, while in one case, at least, there was evidence of actual fraud in the reports.

Perhaps the best-known and most controversial experiments are those reported by the late Paul Kammerer, of

[7] See E. W. MacBride: Chapter on "Zoology" in *Evolution in Light of Modern Knowledge;* also Thomson, J. A.: *Heredity,* Ch. VII.

the University of Vienna, particularly those with the midwife toad and salamander.[8] In both these experiments, he claimed to have produced important bodily modifications in the parents, which were passed on to the progeny. Subsequent investigation, however, proved that some of the results had been faked, and has served to discredit others that may have been genuine. Without attempting to evaluate, one may nonetheless study these experiments as an indication of the intense interest now being shown in the Lamarckian theory.

According to his reported experiments, Kammerer claims to have changed the habits of the midwife toad from that of a land animal to an aquatic variety in two ways: By subjecting it to abnormally high temperature, he speeded the egg development, slowing down the movement toward emergence of the tadpole by subjecting them to darkness and excessive dryness. These eggs and tadpoles, he reported, developed into dwarf-like toads which produced a smaller number of eggs, with richer and larger yolk. In another series of experiments under high temperature, Kammerer claimed that he forced the species to abandon entirely their normal mode of propagation.

But the most striking observation of Kammerer, and one around which controversy still rages, is that the progeny of the second group of toads grew nuptial pads, to enable the male to grasp the female because he was unable to carry the eggs in the ordinary manner. He also claimed that the muscles of the arm were strengthened, giving the fore limbs a more converging position. The nuptial pad and the converging arms are ordinary sex

[8] *Inheritence of Acquired Characters* (Boni, 1924).

characteristics of all frogs and toads, but are usually lacking in the midwife variety. According to Kammerer, the first group of experiments—resulting in gigantic eggs and prolongation of postmaturity on land—revealed a genuine new acquisition.

Kammerer's experiments with salamanders were equally interesting.[9] His first group of experiments were with the spotted salamander, of black skin with patches of yellow, varying slightly with each individual. He placed several young salamanders on a black background, whereupon the amount of black pigment increased. The opposite effect occurred with those on a yellow background, amid damp surroundings. The damp atmosphere served to increase the amount of yellow. These modifications of color were passed on to the offspring, who were born with a color approximating that acquired by their parents.

The next experiments were with a near relative of the spotted salamander, the black salamander, living in the lowlands. Normally, this animal produces two young ones, which, though possessing gills in the embryo, are born without gills. The spotted salamander, however, has numerous tadpole-like larvae with feather gills and a flattened tail. But, kept in a warm, moist place, the black salamander produced two young ones, with gills. When these in turn became grown and reproduced, they produced more larvae than their parents. On the other hand, spotted salamanders kept in a cool, dry place produced fewer larvae than usual, the number decreasing with successive generations. Furthermore, the larvae were born

[9] An excellent summary of these experiments may be found in MacBride's contribution to *Evolution in the Light of Modern Knowledge* (Blackie, 1925), pp. 239-241.

at a later stage, just as those of the black variety were born at an earlier one.

Kammerer reports that these experiments have been entirely confirmed by the completely independent work of Durkhen.[10] He chose as his subject caterpillars and pupae of the common white butterfly, the "cabbage-white." Its pupae are usually of a grayish-white color, varying from pure white to dirty gray, while a few are of bright green. Under normal conditions, only 4 per cent show this color. But by allowing caterpillars to pupate in boxes with lids of orange glass, so that only orange light penetrated, inhibiting the formation of white and gray pigments, he found that 66 per cent of the pupae changed to green. Allowing this group to produce butterflies, which in turn laid eggs, he divided the resulting caterpillars into two lots: one was reared like the parents under orange light; the other, out in the open. Of the first group, Durken found that 95 per cent were green, while the second lot had 34 per cent green compared to only 4 per cent normally produced. Hence, as in the case of Kammerer's experiments, when parents and children are exposed to the same environment, results are intensified in the case of offspring; when the children are placed in a different environment, the results of the parental environment still make themselves felt.

These experiments of Kammerer and Durkhen are considered by Dr. E. W. MacBride as literally epoch-making for the theory of evolution in zoology, showing us evolution in action,[11] and verifying Lamarck's contention that the mainspring of evolution is the response of the animal

[10] See MacBride, *op. cit., pp.* 241, 242.
[11] *Ibid.*

to its environment, i.e., acquired habit. Just as in the formation of habit the action becomes easier with each repetition, so as one generation succeeds another, the response to the same environment becomes more readily called forth, until finally the structures originally called forth by habit are laid down before the exercise of habits is begun.

MacBride himself has carried on some experiments during the last five years at the Imperial College of Science Zoological Laboratory in London, which seem to vindicate Kammerer's experiments.[12] With the aid of an assistant, Miss Sladden, he reared the young salamander and the eggs of the midwife toad, to repeat Kammerer's experiments with these animals. As a result, he succeeded in confirming some of Kammerer's statements about the effect of the environment on the habits of one generation—that it is quite possible to induce the midwife toad, normally a land animal, to adopt an aquatic life. Regarding the salamander, through these experiments he was able to explain Herbst's failure to secure Kammerer's results by showing that he used a species of animal of different habitat from that used by Kammerer.

Earlier experiments of MacBride likewise appear to confirm Kammerer's contentions.[13] In 1912-15, in conjunction with another pupil, MacBride conducted experiments with a stick insect, finding that although its normal food is privet, it could be made to eat ivy. He isolated some 125 newly-hatched larvae in separate boxes containing ivy alone. All the young which accepted the ivy at the same

[12] "Evidence for Inheritance of Acquired Characters," *Nature*, April, 1934.
[13] *Ibid.*

"presentation," to whatever mother they belonged, were classed together. When they in turn became adult, the eggs of each class were mixed together. From each mixture, 100 eggs were selected to rear the next generation. In the second generation, in place of the 10 per cent which originally ate ivy, he found that 80 per cent accepted it on the first presentation. All told, 800 insects were tested. In the third generation, 95 per cent accepted the ivy upon the first opportunity, approximately 2,000 being tested before completion of the experiments. Similar experiments are still in progress, attesting still further, in his opinion, to the possibility of the transmission of psychic acquisitions.

Thus, with these insects, MacBride reached the same conclusions as those arrived at by McDougall in his well-known experiments on the formation of habits in rats—that when members of one generation are compelled to adopt new habits, a residual effect is carried over to the next. MacBride claims, however, that his experiments with stick insects are even more conclusive than McDougall's with rats.

William McDougall began his experiments with rats in 1920.[14] Taking a stock of purebred white rats, he divided it into two equal halves, training each half-stock in successive generations to the achievement of a simple task. The procedure in brief was as follows: He placed the rats in a large tank, half full of water, from which they could escape only by swimming to either one of two sloping gangways. One of these was brightly illuminated

[14] An Experiment for the testing of the hypothesis of Lamarck, *Brit. Journ. Psychology,* XVIII, 1927; also second report on a Lamarckian experiment, *Ibid;* XX, 1930.

and so connected that as soon as the rat touched it, he received an electric shock, strong enough (as evident from the rat's behavior) to provoke fear. Upon repetition of the procedure, each rat learned sooner or later to avoid the lighted ramp and to escape quickly by the other.

Continuing these experiments upon seventeen succeeding generations of rats, McDougall reports the following results: He found that the rats of the later generations of the trained half-stock learned to avoid the lighted gangway on fewer repetitions of the procedure than required by other rats. In his opinion, the difference is too great, and the number of rats dealt with is too large for the results to be attributable to mere chance. In a recent communication to the author, Dr. McDougall writes that "as the experiment continues, every year or so makes more conclusive its positive evidence."

One of the most famous group of earlier experiments testing the inheritance of acquired characters were those of Brown-Sequard with guinea pigs.[15] For a period of about twenty years, Dr. Brown-Sequard experimented on many thousands of these animals. He made a partial section of the spinal cord in the back, or cut the sciatic nerve of the leg. After some weeks, the injury was followed by a peculiar morbid state of the nervous system, corresponding in some respects to epilepsy in man. He allowed these animals to breed, and found that the offspring were frequently decrepit, and that a certain number had a tendency to "epilepsy."

[15] These experiments are summarized by J. Arthur Thomson in *Heredity*, pp. 230-237; for Brown-Sequard's own discussion, see Remarques sur l'Epilepsie causee par la Section du Nerf Sciatique chez les Cobayes, *Arch. Physiol. Norm. Path.*, III, pp. 153-160.

As a result of these experiments, epileptic symptoms appeared in the offspring of parents who had been rendered "epileptic" by injury to the spinal cord, or by cutting of the sciatic nerve. Likewise, abnormal changes in ear shape and partial closure of the eyelids were observed in the offspring of parents in which a similar change followed division of the sympathetic nerve. Cutting of a certain portion of the brain caused the eyes to bulge, a characteristic reappearing in the offspring of four generations, affecting both sides. After cutting of the sciatic nerve, some guinea pigs gnawed off the toes that had lost the sense of feeling. Their offspring in turn were born with parts of the toes missing. Further injury to the brain was followed by dry gangrene of the ears, passed on to subsequent generations.

Although these gruesome experiments were largely negative in character, nevertheless they were welcomed by ardent skeptics of Lamarckism, as "a record of precise experiments, a relief amid anecdotal evidence." And even Professor E. Ray Lankester, noted opponent of the theory of inheritance of acquired characters, was led to remark: "The one fact which the Lamarckians can produce in their favor is the account of experiments by Brown-Sequard, in the course of which he was led to believe that, in a few rare instances, the artificially produced epilepsy was transmitted." [16]

The experiments of W. L. Tower, with the ordinary potato beetle (Chrysomelid), published in a report of the Carnegie Institute in 1906, were hailed at the time as

[16] Quoted by Thomson, *op. cit.*, p. 230.

outstanding evidence in support of Lamarckism.[17] Later investigation of his results, however, have proved a number of his conclusions unfounded. Professor Tower's discussion of the issues involved is nonetheless so pertinent that a brief glance at a portion of this work will not be amiss. As a result of his investigations with various species of the Chrysomelid, he was convinced that all variations in permanency of these beetles arose in the germ cells and not from inherited somatic modifications, as the Weismann school believed. To him the origin of germ variations was correlated with environmental changes. He felt that environment does not act in any specific manner, but solely as a stimulus, which, brought to bear on the germ plasm, produced a permanent variation. In a series of experiments with a species called "Decemlineata," Tower followed the plan of subjecting the parents to environmental stimulation during growth and maturity of the germ cells. The stimuli took the form of extreme variations in temperature and humidity. He reported that variations in breeding and production of eggs arose only in those germ cells subjected to extreme stimuli, while those developed and fertilized under normal conditions did not show the slightest trace of highly divergent permanent variations. Furthermore, when the sexually matured adults of another species were subjected to strong stimulus during development of the germ cells, the result was the production of many rapidly developing extreme and permanent modifications. Here, he stated, is a rapid transformation of the characteristics of the stimulated

[17] Investigation of Evolution in Chrysomelid Beetles of the Genus Leptinotarsa, Carnegie Institute, 1906.

germs into new arrangements, giving new characters of an incipient species.[18]

All through this elaborate work, Tower reiterated his belief that in these beetles the only variations in permanency are germinal, and the only possibility of evolution is through germinal variations. In all his experiments, he stated that there was nowhere the slightest evidence of any specific action of the environment as a stimulus—that the response is entirely determined by the organism. True, all of these variations of purely temporary, as well as permanent, kinds are the result of response of the organism to outside stimuli; but, he argued, the *nature of the response* is entirely determined within the organism itself. It adjusts to different intensities of stimuli and reacts according to its own method, based upon its own constitution. In all his experiments, the stimuli were external, but he saw no reason why they might not be internal also. The response, however, is absolutely determined within the organism.[19]

Tower's views as expressed above suggest the chief difference in point of view between the Lamarckians and the Weismannites. He held that the germ plasm, instead of representing a mosaic or colony of vital elements living with the protoplasmic body in symbiotic relationship, must be that of a unit or separate entity. In other words, a germ cell for him is not a germ phasm *plus* protoplasm and stored food, but by means of its initial endowment of plasma from its ancestors it is *all* germ plasm. It is the product of a series of developmental stages, which always recur in the same order and are relatively invariable.

[18] *Ibid.*, pp. 286, 287, 291. [19] *Ibid.*, pp. 294, 295.

This sequence of stages is conditioned in the germ plasm, but is not produced in the germinal material as material particles. It contains a few *general characteristics* from which these stages come.

Discussing the relationship of the "mutation" theory of DeVries to Lamarckianism, Tower points out that the mutation theory does not supplement natural selection, but complements it. Mutation, he says, explains the origin of variations only, not their selection or preservation. The real question in the method of evolution, he considers, is whether species arise by the preservation of large variations, or by small accidental variations. In both plants and animals, large variations occur, but extreme variations by natural selection. Calling attention to the experiments of D. T. McDougall with the plant Raimannia, Tower saw evidence here to confirm the results he had obtained with beetles—that heritable variations are produced by direct response to external stimuli.[20] McDougall reported that when salt solutions were injected into the ovules just before fertilization, variations, "potential new species," were secured as a result of chemical and osmotic action. As with Tower, McDougall felt this conclusive evidence that factors external to protoplast may exert a profound influence upon its hereditary character, and called out qualities not hitherto exhibited. Thus, for Tower and other supporters of the Lamarck theory, variations are due to *internal* factors within the germ plasm; for their opponents, the changes are *external*, somatic reactions to specific environmental stimuli.

The experiments of Christian Schroeder with the moth

[20] *Ibid*, p. 295.

(*Gracilaria stigmatella*) are often cited as outstanding examples of the transmission of the nest-building instinct. The caterpillars of these small butterflies build their nest with a willow leaf, upon which they feast, wrapping the point of the leaf around themselves and fastening it securely with the strand which they secrete. Schroeder made it impossible for them to follow this habit by cutting off all the points of the leaves of a potted willow plant. But this did not deter a great number of them. Finding the point of the leaf missing, they took recourse to one of two edges. Schroeder repeated the cutting off of the point of the leaves during the development of the second generation, with similar results. From these adaptable little caterpillars, he bred mature moths which were offered a chance to leave their eggs on another willow bush whose leaves were left untouched. These eggs in turn developed into the third generation of caterpillars. Even though the leaves were undisturbed, still some of this group wrapped themselves with the edge of the leaves just as their parents had done before them. The nest-building instinct seemed to have been transmitted from parent to offspring.

Such experiments show striking indications of the possibility of the inheritance of acquired characters in the lower animals, but what about man? Are there any evidences of such transmission from parent to offspring of bodily modifications? Yes, say the supporters of Lamarckism. The human body is full of rudimentary organs—ninety in number—which indicate the possession of organs originally in use by the ancestors of mankind. The appendix is the best known, another is the crescent-shaped fold of the inner corner of the eye, the remnant of a third lid, which is

still observed in birds and reptiles, as the nictitating membrane. Another example is found in the muscles that wiggle the ears, atrophied in most individuals, but found now and then in a few human beings. Further atavisms are the lanuginous covering of the embryo and the development of the spine, tending to form a tail, remnants of which are found in the caudal vertebrae, or coccyx bone. All these have been cited as proofs of formerly more developed forms which by diminished use or modified usage have degenerated in the course of evolution.

Striking evidence purporting to show the inheritance of psychic factors in man is given by A. F. Dufton, in the *Eugenics Review* for January, 1934. To substantiate his belief that capability is an inherited character, and that the most eminent Britishers were born of parents past middle life, he tabulated some 1,000 names from the *Encyclopedia Britannica.* He compared the paternal ages of the select 1,000 with those of normal individuals by plotting a frequency distribution chart for each group. The results were rather startling. He found that for the eminent population, the proportion with paternal age above 45 is twice the normal; that above 60 years of age, ten times; while the proportion with paternal age past 70 was fifty times the normal. Besides the statistics of paternal ages of eminent men gathered from the *Encyclopedia Britannica,* Dufton sent out a questionnaire to all Fellows of the Royal Society, members of the House of Commons, and Headmistresses of the Board of Education. His table again showed that a larger proportion of the more eminent population were begotten by fathers of ripe age.

Assuming this to prove the inheritance of psychic faculties in man, Dufton sees the possibility of improvement of

a race in one generation. Here, he says, is evidence of actual transmission of acquired brain development, in keeping with Darwin's belief that although variability is much less likely to occur in organs which reached their complete development ages ago, it is much more likely in parts of the body of comparatively recent development. Since the brain is held to be of comparatively recent origin in the course of evolution, Dufton seems to have made out a good case for the inheritance of learned responses in the brain, and has opened up a question of vital interest both to the social reformer and the philosopher. The certain establishment of Lamarckism would give new meaning to the course of evolution and relieve general and religious education of a tremendous burden.

The increasing evidence tending to support purposeful adaptation has made the opponents of Lamarckism less cocksure of its "impossibility." Many scientists today, yet unwilling to accept Lamarckism, take refuge in the view of Linné, of the fixity of species, now called the theory of "determinants." According to this theory, the natural blending and separating of characteristics deludes us into the belief of a certain changeability of species. Yet Lamarckists contend that this is too limited to bring about development of a species, much less to create even larger groups and classes.

To meet the charge of the Lamarckists that the theory of natural selection is inadequate, the Neo-Darwinians have taken refuge in the De Vries theory of "mutations." [21] The argument of this theory runs somewhat as follows: Occasionally striking changes occur in plants or animals,

[21] See Hugo De Vries: *Species and Varieties—Their Origin by Mutation* (Open Court, Chicago, 1905).

transforming the character of the species, seemingly in an unaccountable manner. Since the environment apparently does not undergo corresponding changes, mutations must be independent of the external world, and changes in infinitesimal parts of the germ-plasm are responsible for the mutations. But the last causes of such changes still remain unexplained. They result from unknown, inner causes beyond the pale of scientific research. The most frequent mutations occur under unusual climatic conditions, or in animals brought under peculiar environment. If true adaptive mutations *do* occur, however, from whence do they come? Do they just happen? Thus, despite themselves, the Neo-Darwinians seem forced to assume mysterious and inexplicable mutations unless they be the product of Lamarckian transmission.

Another interesting theory accepted by the opponents of Lamarckism is the "hormone" theory introduced by J. T. Cunningham in 1908.[22] He holds that bodily modifications due to peculiarities of environment liberate specific hormones, carried by the blood stream to the reproductive organs, and there specifically affect the germ cells in such a way that a portion of the paternal modifications are carried on to the offspring. This theory offers a convenient explanation for those skeptical of the transmission of acquired characters because of the difficulty of thinking out a method by which extrinsic structural change in certain organs specifically affect the germ cells. The only difference between this theory and that of Darwin's "pangenesis" seems to be in substitution of "hormones" for "gemmules"; and yet its adherents refuse to countenance the thought of Darwinian adaptation.

[22] See his *Heredity and Hormones* (1921).

Darwin held the view that mental processes of men and animals, their purposive intelligent strivings, are of real effect in the guidance of their bodily actions, that they have played some part in the evolutionary process. In this wise, he agreed with Lamarck's theory, that the organism adapts itself to environment, bringing about appropriate modifications in bodily structure and functions, and that it transmits such modifications to its progeny. He maintained especially that the instinctive tendencies of animals had been gradually evolved, and transmitted with increasing perfection from parent to offspring. The effects of use or disuse, depending upon the environment, were considered to be inherited, as for example the appearance of blind bats in dark caves, etc., or the enlargement of an organ. In addition to these, Darwin attributed to changes in climate the power of upsetting the hereditary constition of animals. This disturbance, he thought, produced an indefinite variability in all directions, giving to natural selection its chance of producing any change that circumstances called for.

But Darwin's followers have ruled out the influence of adaptation to environment entirely. Holding that changes produced in the body of an animal cannot cause corresponding changes in the germ cell, and that no outside influences can have any effect on the development of the young, they have tried to account for the changes in some other way.

Asserting the continuity of the germ plasm, the Weismann School have adopted a completely mechanical theory of the life process.[23] They hold that since the reproduc-

[23] August Weismann: *Essays on Heredity and Kindred Biological Problems* (Oxford).

tive cell of any organism is derived by simple fission from the similar cell of its parent, it is not in any true sense a product of the complex organism by which it is carried; the developed complex body is merely a vehicle by means of which the germ plasm is sheltered, fed, and allowed to multiply and perpetuate itself from generation to generation.

Consequently, we have now an evolutionary theory without the influence of adaptation, which Darwin stressed so strongly. The Neo-Darwinists teach that "selection" alone, or survival of the fittest, is the sole principle of organic evolution. But the words "selection" and "struggle" are to them mere metaphors, for the process must be understood only in a mechanistic sense. This principle is presumed to be as applicable to the evolution of chemical elements as that of plants, animals, or men. The course of evolution throughout has been mechanical, a process strictly determined and strictly predictable according to the laws of thermodynamics.

In a word, the School of Weismann claim a sort of omnipotence for the action of selection in accounting for all the marvelous changes that take place in the evolution of a species from generation to generation. Far from being omnipotent, however, as they claim, recent experiments upon the influence of environment indicate that selection alone can never be productive. It is held to be powerless, as far as productive results are concerned, because selection cannot induce new characteristics, or intensify established ones beyond the limit of the tendency already inherent in the race. Selection can only tend to speed up, or stimulate, new developments brought about by exterior influences. It is an exterior influence, for

example, that blackens the wings of the butterflies, lengthens the tail-feathers of the Japanese cocks, dwarfs Japanese trees, or produces the weird goldfish sold at fancy prices. If selective measures are taken when the process of changing is continued, striking results may be obtained —presumably, however, this supports an agent derived from exterior influences already present, which, even without selection, would have gradually effected changes.

J. Arthur Thomson, although no advocate of Lamarckism, nevertheless recognizes the influence of environment upon the organism—that a great part of life consists of *effective responses* to external changes.[24] Regarding variation, he says that when we analyze the observed differences between members of the same species, we find some of them definitely associated with peculiarities of function and environment. "They begin to appear when peculiar conditions begin to operate, and may be experimentally produced," but these are not always true variations. Such changes he regards as changes in germinal material, before or during fertilization. While holding that *observed differences* are causally related to environment, as to *true variations*, these are "only hinted at in earliest stages"; they are "transmissible, but not always transmitted." To his way of thinking, the possibility of modification must be in the organism, "just as the possibility of an explosion is in the barrel of gunpowder." [25]

William Bateson, likewise severely critical of the theory of acquired characters, nevertheless finds himself forced to say: "Making every deduction for the fact that the

[24] See his *Heredity,* Chapter VII. (Putnam's.)
[25] *Ibid.*

wonders of adaptation have been grossly exaggerated, and that marvels of fitness and correspondence between means and ends have grown out of mere anthropormophic speculations, *there is much left to be accounted for than can at all be accepted as the product of happy accidents.*" [26] He will not admit, however, that adaptation takes place as a result of the inheritance of bodily modifications in the offspring, but holds that memory may be unconsciously preserved with the same continuity that the protoplasmic basis of life possesses. This idea, though admittedly speculative and incapable of proof, contains nothing, in his estimation, which our experience of matter or life refutes. We would do well to retain it as "a clue that may some day be of service." He intimates that adaptation is a product of accumulated experiences, yet is unwilling to admit that conscious choice or intelligent purpose had any part in the process.

The opponents of Lamarckism thus rule out completely teleological factors as creative agencies in the process of evolution. To them each act is purely mechanical, and even conscious mental activity of human beings is simply as inert accompaniment of the reflex process of the brain, a phosphorescent glow that illumines but does not influence the course of events. This view would imply that we are all passive spectators, living in a fool's paradise of belief that somehow by purposive striving, by intelligent choice, we can direct our acts into channels of worth-while endeavor. Mind and purpose are mere supernumeraries in the universe, and the history of every human being is explainable in purely mechanistic terms.

[26] *Problems of Genetics* (Yale, 1916).

Nevertheless, like the Behaviorists, the followers of Weismann still have mind on their hands as an enormous remainder which they cannot intelligibly fit into the scheme. Whether they wish to or not, in the course of human evolution at least, they cannot overlook the fact that conscious striving toward definite goals characterizes the growth of civilization, and has put man in the position he occupies today, as the master of the lower animals and the regulator of his own destiny.

Lamarckism, then, is much more than a technical theory of the development of the organism—some of its supporters feel that upon its truth or falsity lies the salvation of mankind. How much more encouraging to hope, say they, that achievements in the realms of art, science, literature, philosophy, and other things of the mind may be transmitted directly to future generations than to feel that all our striving is vain, no matter what circumstances we overcome. If it be true that Man is directly influenced by the world about him, not only by modifications in his bodily structure, but by changes in his brain that cause him to react in different ways to altered circumstances, then is it not the greater part of wisdom for him to exert every effort to make his surroundings such that he may put his best foot forward?

CHAPTER V

SUGGESTED LIST OF READINGS

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Chapter VI

CONTEMPORARY MEDICINE AND THE "SOUL"

Like the biological scientists, medical men of today are turning away from a purely mechanical interpretation of human behavior, and paying close attention to the imponderable factors in illness. Medical science, long adhering to the strictly physical approach to disease, is today beginning to realize the inadequacy of this point of view and to give increasing attention to the influence of the mind upon bodily functions.[1] Contemporary medicine is learning that despite the attempts of certain schools of psychology to eliminate the "soul," or the mind-body factors in life, many kinds of disease yield to treatment di-

[1] The literature upon this question is vast and increasing daily. As representative samples of the trend of thinking in medical circles see the articles listed below:

"Value of Imponderables in Medicine," William J. Mayo, *Mayo Clinic,* XXV, 1933, pp. 1099 ff.

"Tired, Weak, and Toxic Patients," Walter C. Alvarez, *New England Journal of Medicine,* January 17, 1935.

Symposium on Neuropsychiatry, *Medical Record,* January 3, 1934, especially "Mind as Factor in Bodily Illness," by Dr. Newdigate M. Owensby.

"Physical Symptoms from Psychological Sources," Dr. Walter C. Weigner, *Rhode Island Med. Journal,* October, 1934.

"Psychogenic Factors in Disease," Dr. John A. Reed, *Virginia Medical Monthly,* October, 1933.

"Physical Aspects of Psychological Disease," Dr. Adolph Abrams, *Lancet,* March 2, 1935.

"Psychological Factors in Medicine," Dr. Max A. Bahr, *Journal of Indiana Medical Association,* Vol. 26, September, 1933.

"The Similarity of the Aims and Ideals of Physicians Today and Those of 75 Years Ago," Dr. Thomas Ordway, *Clifton Medical Bulletin,* XVII, No. 2, pp. 77-85.

rected toward the psyche. Little by little physicians are realizing anew that soul and body are inseparable, that the consoling faith of religion, or a cheerful disposition, may help the body, and that one's physical condition may affect his entire outlook on life. Medicine has become keenly aware of the importance of the inner world to the patient; that within the "soul" of man are factors making life either a heaven or a hell.

The alarming increase in the number of mental disorders, due to the complexities and confusions of present-day civilization, is responsible in large measure for this shift of emphasis. The care of mental diseases today represents one of the largest and most costly of public functions. It is estimated that the number of patients in hospitals for mental disorders has increased approximately four and one half times as rapidly as the population. The daily average census of hospitalized mental disorders is 50 per cent greater than the daily average number of patients in all the general hospitals of the country. The maintenance of these hospitals costs approximately $60,000,000 annually, to say nothing of the large amount of disability, incapacity, and impaired mental health of thousands outside of the hospitals. Add to this the fact that mental disorder has many ramifications in major community problems such as delinquency, crime, and maladjustment, it is small wonder that medical science is being forced to abandon its purely mechanistic theory of disease and to adopt a more philosophical outlook toward the solution of these pressing problems.[2]

For decades, medicine has attempted to avoid all con-

[2] See Supplement to 3d Report, Committee on Medical Education, American Medical Association, May, 1929.

tact with strictly psychic problems upon the assumption that such are outside its province. Nevertheless, it has been forced to widen its scope so as to include experimental psychology, just as it has received invaluable aid from such branches of science as chemistry, physics, and biology. The study of the neuroses has brought out the unmistakable fact that their causes are often mental, and that their cure depends to a great extent upon psychic methods of treatment. The attempts to delimit and explore this special field—both from the side of psychology and neurology—have led to renewed study of the influence of the *psyche* upon the *soma*.[3]

The psychic factor in disease is now recognized in its own right along with such factors as inheritance, disposition, bacterial infection, etc. It is well known that physicians are often unable to cure an ordinary disease in a person with a distorted emotional life, and that drugs lose their efficacy under great emotional stress. Furthermore, many cures take place in our hospitals that are unexplainable on the basis of our present knowledge of medicine. Patients have been known to recover who were expected to die, and have astonished their physicians. Some of the most outstanding instances of cures presumably effected by the emotions are those reported at Lourdes, St. Anne de Beauprés, and other noted shrines. Things happen at these places which cannot be explained upon purely mechanical principles alone. Certain unknown psychic forces appear to be at work here bringing about

[3] See Symposium, *Problems of Mental Disorder* (McGraw-Hill, 1934); Berhard Hart: *Psychopathology—Its Place in Medicine* (Cambridge, 1929); William A. White: *Medical Psychology* (Nervous and Mental Disease Publishing Co., 1931).

some remarkable recoveries that apparently restore people to normal health.[4]

That modern medicine is paying more and more attention to the influence of the mind upon the body may be seen by even a cursory glance at the medical literature of today. The newest emphasis in nearly every field of research, from biology to psychology, from constitutional medicine to neuroanatomy, is on the importance of careful study not only of the parts, but of the organism as a whole. From the experimental evidence, two facts stand out: (1) That the whole living organism in terms of both structure and function is something more than the aggregate of all its parts; and (2) that an individual's actions are determined primarily, not by environmental stimuli, but by the total pattern of his personality.

A striking illustration of the changing viewpoint of contemporary medicine is the movement fostered by the Committee on Education of the American Medical Association to revamp the curricula in leading schools of medicine. Current dissatisfaction with medical curricula has been expressed recently in two extensive studies of medical practice and medical education in the United States. One of the recommendations of the Committee on the Costs of Medical Care of the American Medical Association stresses the necessity for training more general practitioners in whom medical service to the "whole man" may be centered. The Committee feel that "the social background and interrelations of medicine should be as

[4] See H. Flanders Dunbar, M.D., "What Happens at Lourdes?" *Forum,* April, 1934; "Faith and the New Psychology," *Living Church,* January 13, 1934; "Medicine, Religion, and Infirmities," *Mental Hygiene,* XVIII, No. 1, January, 1934.

much a part of medical education as the physical, chemical, and bacteriological background." Psychiatry, public health, and the social aspects of medicine are held to be just as essential in the life of the doctor today as training in classification of the white blood corpuscles or in learning the names of various organs of the body.[5]

It is not only in the United States that stress is being placed upon the teaching of psychiatry and the organismic conception of life, but there is hardly a country today in which the reform of medical studies toward this end is not being discussed at the present time.

Such revamping of the medical curricula, already adopted or suggested, is part of the changing attitude of the relation of the physician to society. But the reorientation of medical education now under way implies much more than a mere revision of the curriculum. It involves a redefining of the purpose of a medical course. Under present conditions, it is felt that the doctor must be trained not only to care for the sick, but to prevent illness as well. He must familiarize himself with the structure, functions, and behavior of the organism as a whole, in health and disease, and in relation to the various factors of the environment which have an influence on them.[6]

In line with this thought, efforts are being made to overcome the isolation of the various medical courses and to correlate them into an integrated whole. Especial stress is being placed upon the study of the *living* body, to relate courses in anatomy and physiology that have been

[5] See "Medical Education in the United States," *Journal of the American Medical Association,* August 25, 1934, p. 565.

[6] See "Crisis in Psychiatric Education," Franklin G. Ebaugh, *Journal of the American Medical Association,* August 20, 1932.

unfortunately divorced. Critics of present-day medical training contend that the student has really never been taught to study the human body as it functions in a living being. His knowledge has come from the cadaver, whose desiccated organs have lost their true relations in the living body, and give the student an incomplete picture of the living, breathing individual. He has learned the parts first, without reference to the whole, and is somehow expected later to synthesize these disconnected facts and relate their meaning.[7]

This has led Doctor William A. White, Superintendent of St. Elizabeth's Hospital, Washington, D. C., to remark: "When the medical student finishes his training and starts to practice medicine, he has a pretty comprehensive idea of the size, form, and functions of the several parts of the body . . . but if he were asked to explain how all these several parts fit together and function as a co-ordinated whole, he would be at a loss to know how to answer." [8]

Little by little, however, physicians are gradually getting away from what has been styled the "guinea-pig" school of medicine to realize the difference between the guinea pig and the person. Medical schools are trying

[7] William A. White: *Medical Psychology* (Nervous and Mental Diseases Publishing Co., 1931).

[8] *Ibid.,* Introduction, p. 1. Cf. similar points of view from leading medical men abroad:

"Orientation of Medical Education," Alexander Miles, *Edinburgh Medical Journal,* Vol. 40, March, 1933, p. 183.

"Psychological Regard of Medical Education," Charles S. Myers, C.B.E., M.D., F.R.S., *Lancet,* Vol. 2, November 11, 1933, p. 1075.

"Place of Psychology in Medical Curriculum," David Forsyth, M.D., D.Sc., *Proc. Royal Society of Medicine,* Vol. 25, June, 1932, p. 1200.

"Medical Education and Reform of Medical Studies," by Etienne Burnet, Pasteur Institute, *Quarterly Bulletin, Health Organization, League of Nations,* Vol. 2, 1933, pp. 621-729.

to put before their students the fact that a doctor has to deal with sick individuals and not with the guinea pigs of the physiologist. In keeping with this idea, increasing attention is being given to courses in "psychobiology." In the words of Dr. Adolph Myer, "Psychobiology starts not from a 'mind' and a 'body' but from the fact that we deal with persons as biologically organized units and groups, behaving in more or less definable situations." [9] It occupies itself with a "body in action," with the "he" or "she," and in its study of behavior goes far beyond what can be read off from the dead body. It deals with the live organism in action, as behavior in the process of life situations or life developments. In contrast to physiology, which stresses the whole range of particular functions of special organs, and their central connections in the brain, psychobiology deals with more specific events and "total functions" in a specific individual life. It comprehends and requires recognition of all the sciences that have a bearing upon the individual's existence.

The new approach to disease has been conveniently summed up in this fashion: Here is a sick human being. Whether he has typhoid fever, pneumonia, or infantile paralysis does not matter. But most important, what is he doing about his bodily illness? What is his attitude? What is he making out of it? What is he going to do when he is cured or when he has to live the life of a cripple? In other words, what is the total reaction of the individual to the particular situation? Through this point of view, it is brought home to the student that the patient is a *human being* and that, even after diagnosis, he is still

[9] "Psychobiological Point of View," in *Problems of Mental Disorder* (McGraw-Hill, 1934), p. 54.

dealing with a human personality, and not merely with the case of a particular disease.[10]

The extent to which medicine is changing its concept of disease may be seen from the amount of space now given in various medical journals to the discussion of physical-mental factors in illness. Likewise, it is quite significant that such a staid reference manual as the *Quarterly Cumulative Index Medicus* now carries a heading "Physical-Mental Relationship" under the caption "Disease." In the references listed under this heading, and throughout contemporary medical literature, there is striking evidence of a fundamentally changing concept of disease.[11]

The trend in modern medicine away from specialization, and away from treating diseased hearts and livers as if they were organs entirely removed from the personality of the patient, has been accompanied by a rapidly changing attitude toward psychiatry. Psychiatry is the only branch of medicine that enables the student to see the patient as a whole. It assists the student to apply his knowledge of physiology, anatomy, and other biological sciences to the understanding of the patient as an individual. The various ways in which the individual, with his own special endowment, his own inner difficulties of equilibrium and past experiences, adapts himself to the conditions of his life by word and thought and deed—all these are of vital

[10] See the interesting comment on this point by Dr. Fielding H. Garrison in his *History of Medicine* (Saunders, 1929). He calls attention to the trend today back to the teachings of the Hippocratic or Coan School, which centers on the *patient,* as opposed to the Cnidian School, with emphasis on the *disease.*

[11] For further comments on this point, see H. Flanders Dunbar, "Physical-Mental Relationship in Illness," *American Journal of Psychiatry,* Vol. 91, No. 3, November, 1934.

concern to the psychiatrist, and to the general practitioner as well.

The psychiatrist today is concerned with the whole question of personality adjustment, of the individual's reaction to his total environment.[12] He does not limit himself to the purely mechanical aspect of human behavior, but studies both mental and physical factors involved. He realizes, for example, that certain morbid fears, or delinquent behavior, may be due to inadequacy of diet, some disturbance of endocrine balance, or some other physiological inadequacy. Hence he must try to fathom the various factors that may tend to upset the chemical or physiological balance. But at the same time he must note the factors in the environment which lead to a disturbance of the individual's emotional life. Looking at the total situation, the psychiatrist probes into the complexity of environmental and cultural factors, and studies in detail the way in which the individual adapts himself to the specific situation in his own life. This point of view is stressed particularly in the constitutional theory of disease, which seeks to show a direct connection between particular types of constitution and particular forms of illness. Here there appears a close tie-in between anthropology and the teachings of psychiatric medicine.[13]

Like the psychiatrist, the neurologist today is also inclined to give an important place to the psychic factors

[12] See C. Macfie Campbell: "Clinical Psychiatry," in *Problems of Mental Disorder,* Symposium. For an excellent discussion of *Personality Adjustment in Marriage,* see Carlo L. Lastrucci, Master's Thesis, University of North Carolina, 1935, esp. Chs. I-III, Conclusions, pp. 121-129, and selective bibliography.

[13] See Franz Alexander: *Medical Value of Psychoanalysis* (Norton, 1932).

in disease. He feels that, as a student of human behavior, he must reckon with a great many other factors than the purely pathological. He is becoming more and more aware that psychological factors, although as yet incapable of precise evaluation in physiological terms, are capable of producing behavior or mental disorders, and in turn may be used for the melioration, if not the cure, of such disorders. He recognizes that emotion is capable, under appropriate circumstances, of working havoc with both mental and physical conduct. Disconcerted by his frequent inability to deal therapeutically with mental problems in the same way as he treats organic disease, he has been forced to consider the vast number of psychological and sociological factors which enter into the problem of human behavior.

This breaking down of the old dualism between mind and body is revealing the closer relationship between mental and biological processes, and the futility of attempting to separate mental diseases from physical diseases, or mental processes from physical processes. In line with this trend, there has been an increasing tendency in medicine to take account of psychological influences in the origin of certain diseases whose origin is as yet uncertain. For example, such conditions are hyperacidity, erosions in the mucous membrane covering the stomach and duodenum; and disturbances of the blood of these mucous membranes are believed to be due to psychic causes. They are presumed to be symptoms of chronic gastritis, but physicians have not always been able to discover the physiological causes of gastritis itself. The fact that a change in diet cannot cure the majority of cases has made medical men doubt that faulty diet is the main causative factor.

As a result of recent research, some investigators feel that nervous influences are responsible for the hyperacidity, as well as changes in blood supply of the stomach.[14]

These facts have led to the gradual breaking down of the old distinction between functional and organic disorders. It has been found that certain diseases usually termed "organic" sometimes yield to psychological methods as certainly as the "functional" type. Although Coue was not a physician himself, yet physicians have recognized the evidence he presents for the cure through suggestion of diseases presumably organic in character. It has been argued that the suggestive action which manifests itself in the case of tumors, local malformations, etc., can be very simply explained solely by the influence of the mind. Further, ideas implanted in a suggestible mind may even lead to the building up of cellular tissues in an organ diseased through physical causes, seeming to prove the statement that "there is no tissue of the human body wholly removed from the influence of spirit."

Medical science thus recognizes that certain unhealthy, habitual states of mind are apt to be accompanied by various derangements of the function of the body. In keeping with this thought, medicine has found in psychotherapeutics an effective means for the resynthesizing of personality—the restoration of the normal individudal. The aim of psychotherapy is to reassociate the split-up personality, to form such healthy complexes of ideas as will stimulate the desired complexes and contribute to the

[14] See in this connection Arvid Landau, *New England Journal of Medicine,* 205, No. 20, 1931, p. 978; also Harvey Cushing, Richard V. Light, *Ibid.,* pp. 979, 980; also Walter C. Alvarez, *Ibid.,* January 17, 1935; Newdigate M. Owensby, *Medical Record,* January 3, 1934.

well-being of the individual, adapting him to his environment.

An important phase of present-day psychotherapy is known as the process of "re-education," a modification of the patient's mental mechanism as an effective cure for certain nervous disorders. "Isolation" and "work" cures are found to yield their best results when made parts of a broad system of education. Since the final aim of isolation is to make the individual fit for social life, as far as possible work done by the invalid should lead to work done for the social welfare. Success in treatment is estimated not so much by the disappearance of symptoms, as by the appearance of a thoughtful individual, liable to fail, but competent to use his failures in the interest of progress.[15]

Merely securing the proper adaptation to a given environment is not sufficient—it does not supply meaning to life nor the motives for living. One of the greatest mistakes of medical science has been the assumption that it could get on without interesting itself in spiritual matters. Such questions as man's origin and destiny, faith and hope, were presumed to be entirely outside the province of the physician. Yet, it is now being recognized that the truly capable physician must at times be both a philosopher and a psychologist, ready to minister to the patient's mental ills as well as to aid in the healing of his body.

In the formation of character, physicians and educators, religious and otherwise, make use of the same fundamental influences: Utilization of emotions, desires, strong inter-

[15] See E. W. Taylor: "Re-Education as a Method," in *Psychotherapeutics*, Symposium (Badger Press, 1910); "Character Formation and Psychotherapy," *Ibid.*, by Dr. James J. Putnam.

ests, and enthusiasm; definite and arduous training in some one direction; and the eradication of conflicting desires, or hidden obstacles to the reconditioning of motor habits and memories in the subconscious. All these aid definitely in character formation through the systematic training of the will, and the assumption of duties and obligations toward individuals and the community.

It is a well-known fact that the too self-conscious individual by concentration upon himself becomes morose, hypochondriacal, unfitted to carry on his daily tasks. In this respect, then, he has "lost his life," and finds no joy in the things that make it of any value. For, true mental and physical happiness lies in the automatic functioning that is unconscious of itself. Both doctor and clergy realize that one who loses himself in his work, or exerts himself for the good of others, finds in that work a happiness and peace of mind not otherwise attainable. One who is so "lost" in his work or in the service of others turns his thoughts away from himself entirely, accepts the possibilities of illness and disappointment, and "finds" his life in the thought of work well done.

Ofttimes the physician finds that what the patient needs is to change his entire outlook on life, to avoid gloomy thoughts, and to engage in some worth-while occupation. Through suggesting the right acts, the physician helps the individual adapt himself to his surroundings. It is at this point that medicine comes in close contact with religion.

As a result of the increasing recognitions paid to the influence of the emotional factors in life, there is a reawakening of body-mind relationships and a growing correlation of the functions of religion and medicine. Physicians realize that curing some particular disease accomplishes

little if the patient be sent back into surroundings which will cause a recurrence of the trouble. Because of the growing recognition of the close relationship of the psyche and soma, contemporary medicine is finding a good ally in religion. As an interesting sample of the trend of the times, there was founded in 1922 the International Society of Religion, in Germany, composed of general physicians, psychiatrists, psychologists, and theologians. Psychiatrists have come to realize that a study of beliefs is a necessary part of the general study of man's adaptation to environment, that one's Weltanschauung, or philosophy of life, has a great deal to do with the condition of his health.

An outstanding instance of the growing relationship between contemporary medicine and religion is the Council for the Clinical Training of Theological Students, incorporated in 1930, after five years of experimentation. This Council aims to do what medical schools have long been doing—provide intensive and practical training for dealing with the infirmities of mankind. The Council Board is made up of physicians, psychiatrists, and clergymen. Together with the Council staff, the board supervises the clinical training of specially qualified theological students in ten training centers, involving work on poor farms, state prison systems, child guidance clinics, and in mental and general hospitals. The Council aims to help the clergyman develop his own teachings in relation to human problems, feeling that his relation to illness and emotional disturbances of all kinds is not primarily a therapeutic one but a preventive one.

In the development of its program and policies, the

Council has been greatly aided by the Committee on Religion and Medicine of the Federated Council of Churches of Christ, and the New York Academy of Medicine, which is engaged in research of direct consequence to the practical and educational activities of the Council. Under the present program, theological students work three months in a mental hospital, three months in a general hospital, and are then allowed to follow any special field of study that appeals to them. In this way, they become familiar with various forms of illness, make the acquaintance of physicians and psychiatrists, thus paving the way for later friendships, and learn to develop a technique of their own.

In the complexity of modern life today there is more and more need for a close relationship between medicine and religion. Both the minister and the psychiatrist are engaged in helping men and women adjust themselves to their surroundings. Both together can help thousands of distressed men and women to a deeper understanding of themselves, to a more perfect adjustment, a more adequate control. Both the physician and the pastor must know their patients as individuals, how each reacts to his particular surroundings, and the circumstances which have made them what they are.

Dr. Thomas Ordway, of the Clifton Medical School, has stressed the importance of understanding the patient as a personality. "Time, sympathy, and understanding," says he, "must be lavishly dispensed, but the reward is to be found in that personal bond, which forms the greatest satisfaction of the practice of medicine. One of the essential qualities of the clinician is interest in humanity, for the secret of the care of the patient is caring *for* the pa-

tient." [16] So the pastor must give his time, sympathy, and understanding to help individuals adjust themselves to the complicated forces of our modern civilization.

Purely physical treatment of nervous disorders can help the patient over a good part of the road, yet it does not go beyond the frontier of human life. It affords no answer to the question of *spiritual* suffering and its innermost meaning. A psycho-neurosis must be understood as the suffering of a human being who has not discovered what life means for him. For this reason, the clergy and the doctor are closely linked. To make the patient truly whole, the physician must convey to the patient something that will take possession of him and give meaning and form to the confusion of his mind.

Dr. Carl Jung has called attention to the fact that mental illness is closely associated with a decline in religious life, that the lack of something to tie to has everywhere produced an alarmng lack of balance. In this period of restlessness, nervous strain, and disorientation of outlook, many patients have come to him, not because they were suffering from a neurosis, but because they can *find no meaning in life,* or were torturing themselves with perplexing questions. Unfortunately, few doctors are equal to the task, for as medical men they have felt it unnecessary to have a finished outlook on life. The clergyman should be the logical man, but he lacks the special knowledge, and too often has been the victim of traditional bias which prevents him from judging the patient impartially. Of the hundreds of patients over 35 years of age whom he has treated, Jung states that "there has not been one

[16] Quoted by Dr. John R. Oliver in *Psychiatry and Mental Health* (Scribners, 1932), p. 12.

whose problem in the last resort was not that of finding a religious outlook on life. It is safe to say that every one of them fell ill because he had lost that which the living religions of every age have given to their followers, and none of them has been really healed who did not regain his religious outlook." [17]

More and more the physician and the clergyman are finding many points of contact. Each deals with human nature in the effort to adjust the individual to his environment, and of enabling human beings to enjoy a richer, fuller life. Because religion offers such a powerful motivation as a goal for human achievement, the physician should welcome religion as an ally, regardless of the form it takes, because it gives the patient a sense of security and hopefulness which reinforces all the influences making for better mental health and self-confidence.

Until recently, doctors resented any encroachment of religion in their domain, while those who used faith for healing have insisted that calling the physician showed lack of faith in God. Fortunately, today, there are clear signs of a moving away from these two extreme positions. The physicians, partly because of the new psychology, have come to realize the significance of mental attitudes and the availability of the religious motive as a means of helping the patient to use all his capacity in his fight for health. Likewise, those who have maintained the supremacy of the spiritual are becoming more and more tolerant of those who wish also to enlist the services of the physician in dealing with conditions of the body.

These are random examples of how the doctor and the

[17] Carl Jung: *Modern Man in Search of a Soul* (Kegan Paul, 1933), p. 264.

clergyman are working side by side. To fill its mission in the modern world, the church must make greater use of the methodology of modern science, while medicine, to cope adequately with the problems of mental illness, needs the help of religion in enabling the individual to react properly to his environment. Modern psychiatry has found it necessary to probe into the innermost life of an individual to discover the origin of human problems of maladjustment. Personality is the source of all the disturbances and inner schisms that make life a burden, or of the co-ordination of faculties that make it a thing of joy and gladness. For this reason, medicine and religion must correlate their efforts to fathom the mainsprings of human conduct, if they are to help men and women use their natural capacities to the best advantage.

Present-day medicine, then, is realizing anew the importance of the patient as a personality, that the physician can not make blanket prescriptions to fit all cases, but must suit the cure to the individual needs and peculiarities of the patient with whom he deals. Leaders in medical service realize the necessity for giving close attention to the psychic aspects of disease, the neglect of which has given the quack and the charlatan an opportunity to exploit therapeutic resources that rightly belong to medicine. The modern physician can no longer be a mere diagnostician or dispenser of drugs, but must endeavor to help the individual orient himself properly to his surroundings, to become again a normal member of society.

The doctor and the clergyman, then, are uniting their efforts to rebuild human personality, to make it possible for man to live a more abundant life, freed from petty cares and worries to which the flesh is continually heir.

Each must help him along the road, lift him where he has fallen or is disheartened, and open before him those vistas that will give him hope and encouragement. In this wise will he be fitted to fight life's battles, and with a serenity of mind may exert himself toward the accomplishment of worth-while tasks.

CHAPTER VI

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Chapter VII

LESTER WARD AND CONTEMPORARY SOCIAL PHILOSOPHY

Up until now our attention has been confined chiefly to the trend of thought in certain of the "natural" sciences, noting with interest the emphasis which biology, physiology, psychology, and medicine are placing upon the "psychic" factors of human behavior. This emphasis, however, is not confined to the "natural" sciences, but a stressing of the causal efficacy of mind as a factor in civilization is equally noticeable in contemporary social theory. The chaos and confusion to which our social and economic order has been subject have made it more and more necessary that intelligence in the direction of human affairs be pressed into service. Artificial selection, or the ideal of a conscious pursuit of the common good, bids fair to overcome the blind forces of *laissez faire,* formerly current, and to aid in the creation of an ordered society, directed toward a definite goal.

That the science of prevision for the future is gaining ascendancy over *laissez faire* principles is strikingly evident from a glance at the political scene of the present day. One need only call to mind a few of the alphabetical groups set up under the present Administration to realize how far we have come from the days of "rugged individualism," once the pride of our fathers and grandfathers. What with such comprehensive organizations as the Farm Credit Administration, the Reconstruction Finance Cor-

poration, and the Tennessee Valley Authority; such varied groups as the PWA, the HOLC, and the WPA—then when we consider the vast social-security, unemployment program, together with the setting up of a permanent reforestation program and the proposed government supervision of natural resources, we have ample evidence of the tremendous sweep of the movement toward artificial manipulation of our economic destinies—whether for good or ill remains to be seen.

It is generally conceded that the maldistribution of our raw materials, manufactured goods, and the lack of coordination among our transportation facilities has been caused in large part by a failure to plan ahead, and by adherence to the vain hope that somehow we would "muddle through." People were led to believe that they could keep on increasing the output of farm and factory indefinitely, and that some magician would devise ways and means for that increased output to be consumed with reasonable profit to the producer. But, to our sorrow, we have learned that no abacadabra, or wave of the hand, can alleviate our miseries, but that only concentrated effort toward a definite goal will suffice. Today, Government and Industry have entered into a partnership of planning ahead for the future, unwilling any longer to trust to "Nature" or to a bountiful "Providence" to steer us over the rocks. Acting with a conscious purpose in mind, our social and political leaders are attempting to counteract the influences that have threatened to destroy society itself.

Today, in truth, we are living in an age of new social and economic thought that calls for new practices and an unlearning of many stereotyped lessons and copybook

maxims. Principles and rules laid down by the dogmatists of the "dismal science" of political economy are now being questioned on all sides. The very terms that had a reasonably definite meaning in the days of Adam Smith and Karl Marx, and other economists of the older schools, no longer have the same significance, by reason of the remarkable changes that have occurred recently. Similarly, we have had to revamp our notions regarding the functions of Government, the Courts, and of various other forces of vital importance to society. The rules of the game today are entirely different from what they used to be: The whole economic structure of the world is different. New national and international factors must be taken into account. The nationalization of major industries by foreign countries and the adoption of new methods in agriculture, commerce, finance, and in other fields make it impossible for us as a nation to live under a *laissez faire* regime.

It is interesting to note that the chief tenet of modern social philosophy in the United States—the controlling of social forces through a benevolent intelligence—is the keynote of the philosophy of Lester F. Ward, whose *Dynamic Sociology* appeared a little more than fifty years ago. It is a rather striking fact, too, that the conditions which gave rise to the launching of Ward's thesis in the 1880's are similar in principle to those that have occasioned a revamping of his doctrines in keeping with present-day affairs. In Ward's day, the *laissez faire* economics of the time, combined with Darwinian evolution, gave rise to the theory of the survival of the fittest in society. Ricardo's "iron law of wages" and Malthus' population theory further added to the belief in the unalterableness of nature's laws; Mankind was held to be merely a plaything

in the hands of mechanistic forces over which he had no control. Did crises in society occur, it was the "hand of God," or the inexorable laws of "supply and demand" that occasioned them. Man could only grit his teeth in stoic indifference, and await the next onslaught of the monster, Chance.

Today, the principle of prevision and the inauguration of definite means for social control has come in conflict with the sacred doctrines of the mechanists, who hold Man to be a mere physical machine, played upon by blind mechanical forces that mock his puny efforts. Similarly, large vested interests, who have thrived upon the non-interference of Government with Business, have been clamoring loudly for the continuance of *laissez faire*, and prate often of "Competition as the lifeblood of commerce." Such groups, although themselves definitely manipulating economic and social forces for their benefit, would forestall governmental regulation of economic activity, pretending that the laws of demand and supply alone determine their survival. In like manner, leading nations of the world, jockeying for position in the international arena by wiles and intrigue, pretend to believe that the hand of Fate pushes them into whatever place they take in world affairs. In such wise has Mankind continued the blind, non-purposeful journey down through the ages, each group in isolation, seeking only its selfish interests.

In sharp contrast to the fatalism of the above groups is the thesis of Lester Ward that, by intelligent action, Man may manipulate his own destiny. His criticism of the biological determinism of Spencer in the 1880's would apply equally well to the deterministic philosophy of certain schools today. His stressing of the role of artificial se-

lection as a means of determining the trend of human affairs, against the "survival of the fittest" doctrine, is as significant today as it was fifty years ago. At that time, he exposed the fallacies of *laissez faire,* and showed the advantages of governmental regulation and control of certain social forces. Through a kind of "materialistic idealism," in which Man is a vital part of the machinery of cosmic evolution, instead of a mere speck on a clot of mud, whirling aimlessly in space, Ward transformed the pessimism of social Darwinism into a forward-looking intellectualism that provides a key to unlock the fetters of blind circumstance.[1] By the application of what he termed "creative synthesis," or the manipulation of the various environmental forces, Ward believed that Man could work out his own salvation. Drawing comparisons from the fields of zoology, botany, chemistry, and physics to formulate his "scientific principles," Ward introduced analogical conceptions of social phenomena which have done much to shape present-day thought about social problems. It is most significant, indeed, that Ward's criticism of the supposedly perfect methods of "nature," and his conception of a purposive achievement in society, through the use of intelligence, to manipulate the materials, forces, and processes of nature, to Man's advantage, furnish the philosophy that lies at the base of the recent extension of governmental prerogatives into fields formerly sacred to private initiative.

Ward's contributions to modern social philosophy are many, but our debt to him, today, is particularly great

[1] See especially his *Dynamic Sociology,* Vol. II, Ch. VIII, and *Pure Sociology,* Chs. XVI and XVII. Here he discusses the rise of the objective factor of intellect and its function as a directive agent.

for his masterful presentation of the nature and method of "collective telesis," and for his emphasis upon the necessity for the universal distribution of knowledge by means of which human progress may be controlled.[2] Because of the far-reaching influence Ward's *Dynamic Sociology* has had in shaping much of modern social thinking, it should be of interest to review briefly the bare outlines of his system.

The role of the intellect in guiding the destiny of Mankind is the cornerstone of Ward's philosophy, and upon which it may be said that much of present-day "social psychology" has been built.[3] According to Ward, behind this guiding force of the intellect, there must be some greater power which constitutes the dynamic agent of human progress. All beings that can be said to perform actions do so in obedience to their mental states of "desires." Desire is the essential basis of all action, hence the true force in the world. These feelings, or desires, in the lower animals, are the means for the preservation of life; in Man, they become the mass of physical, emotional, and intellectual forces that carry the human race along its upward march. To aid the organism in its struggle for survival, intellect slowly evolved as a guide to the feelings. As the individual feelings, directed by the intellect, furnish the key to individual activity, so the social feelings, or forces, guided by the social intellect, furnish the key to social progress, and all concomitant physical and cultural activities.

[2] See G. A. Lundberg: *Trends in American Sociology* (Harpers, 1929), contribution by Reid Bain, "American Sociological Theory."

[3] See J. Q. Dealey: *Sociology, Its Development and Application* (Appleton, 1920).

As the intellect resumes greater and greater control over the feelings, society no longer seeks to gratify merely the physical desires, but strives to attain higher moral standards by seeking the Good; higher esthetic standards, by searching for the Beautiful; higher intellectual standards, by seeking the Useful and the True. In this wise, Mind sets up a goal for social energy and guides the social forces into their proper channels. It directs society into unobstructed paths, and enables those forces to continue in free play, unmolested by collision with obstacles.

Such, then, is the theme of Ward's social philosophy—the supremacy of the artificial over natural processes, of the indirect over the direct method. In answer to the age-old adage that "Nature never does anything in vain," Ward multiplies illustrations to show the extreme wastefulness of nature. In his opinion, "No true economy is ever attained until intellectual foresight is brought to bear upon social phenomena. . . . It requires millions of years to produce an organic structure. . . . Through artificial selection, Man accomplishes in a few years what nature required ages to produce." [4] In society, as in nature, uncontrolled forces are blind forces, impelled to direct action toward the objects of desire. If obstacles intervene, they are simply arrested, and never attain these objects. The intellect, however, marks a transition to the indirect method, and constitutes one of the great leaps which nature has taken along its course of evolution. Through it, the possibilities of vital existence are multiplied, and interposed barriers may be evaded by round-about methods of approach.

[4] *Dynamic Sociology* (D. Appleton, 1883), Vol. I, pp. 74, 75.

Ward's view that true progress is artificial progress is well attested by the achievements of modern science that have altered and bent the forces of nature to the advantage of Man. All social progress, or civilization, is a process of calculation, says Ward. Through artificial selection, or purposive achievement ("collective telesis"), Man may direct his own destiny. The possibilities of teleological effort in society are unlimited. Ward believed that its realization would accelerate the rate of social advancement in the same way as the artificial development of domesticated animals and cultivated vegetables, through human foresight and intelligence, has accelerated their natural development.[5]

Before we can act intelligently, however, we must have the proper Knowledge. To Ward the proper kind of knowledge does not consist in that gained through trial and error, logic, culture, or in research alone, but in the education of information. To him this meant a system "for extending to all the members of society such of the extant knowledge of the world as may be deemed most important." Through adherence to this principle, Ward pictured Man as complete master of his environment, working out his salvation under the guidance of intellect, supported by the weight of scientific knowledge. No longer need Man quake in fear of the supernatural, or blame a Nemesis that dogs him to destruction. If we fail to become masters of our destiny, shall it not be said, in truth, that

[5] For an excellent summary of Ward's doctrine see James P. Lichtenberger: *Development of Social Theory* (Century, 1932), Ch. XIII, pp. 355-399.

"The fault is not in our stars,
But in ourselves, that we are underlings"?

The infiltration of Ward's ideas upon modern social philosophy is especially evident in the emphasis now placed upon the psychic factors as guiding forces in society; the growth of an organic, synthetic view of social life; and a tendency to develop the science of sociology in the interest of ethical ideals and social reform. The marked attention now given to the psychic factors in social development is manifest from the great prominence which Social Psychology has attained as a phase of Sociology.[6] The writings of Professor Charles A. Ellwood, particularly, illustrate this tendency to stress the mental side of life, while the writings of Professor E. A. Ross, more than any other sociologist perhaps, come nearer to carrying on the Ward tradition in the interpretation of social phenomena. The development of a synthetic view of social life, by reason of which all social studies now tend to converge toward a definite goal, is exemplified in such books as Barnes: *History and Prospects of the Social Sciences;* Hayes: *Recent Developments in the Social Sciences;* and Ogburn and Goldenweiser's *The Social Sciences in Their Interrelations.*

It is a rather interesting fact, today, that in many sociological writings a revival of controversy over the meaning of the term "Progress" has developed. For many years the use of this term has been taboo, and there has been a tendency to discredit Ward's doctrines in that he always

[6] See Fay B. Karpf: *American Social Psychology* (McGraw-Hill, 1932), especially pp. 216-247; also J. F. Morley: "Trends in Social Psychology," in *Trends in American Sociology* (Harpers, 1929).

spoke in terms of the "progress" of society. Consequently, it is of especial significance that discussions of "progress" are found in the works of such modern sociologists as Case, Chapin, Ogburn, Hart, Keller, and others. This revival of interest in "Progress" serves to vindicate the soundness of Ward's reasoning, and marks the acceptance of his contention that "Progress" means artificial selection as opposed to non-purposeful evolution. Ward has likewise been criticized because of the insertion of ethical concepts of "happiness" and the "greatest good" into his system, yet it is significant that no sociologist today has been able to eliminate such concepts from any theory of social reconstruction.[7]

At the present time, there are many forms of applied sociology, looking toward the improvement of society, and all of them are based upon some implicit conception of "progress," on some ethical religious ideal. All have generally adhered to Ward's thesis that Man is master of his own destiny if he will only use his intellect to overcome obstacles. In truth, few thinkers of note today question the efficacy of artificial selection, although such biological determinists as C. C. Brigham, Lathrop Stoddard, and A. E. Wiggam still cling to the view that our destiny resides in the germ plasm alone. Yet, even these dogmatists honor Ward, since in their worship of Eugenics they are supporting a vital phase of the entire process of artificial

[7] Although sociology in the United States is no longer conceived primarily as the science of evolution or "progress," still the interest of American sociologists in these matters has persisted. In the twenty-two year period from 1913-1934, for example, there were at least sixteen outstanding books upon this topic by American authorities. See Floyd N. House: *Development of Sociology,* Ch. XXVI, p. 305 (McGraw-Hill, 1936).

selection. They differ from Ward only in the fact that to them Eugenics is an end in itself; while Ward considered it only as one means to the definite aid of improving the condition of human society.

Ward's doctrine of "collective telesis" has done a great deal to stress intelligent purposive action as the basis of human behavior, and his severe criticism of genetic determinism constitutes his greatest contribution to social psychology.[8] His treatment of the genesis of organic forms and the development of Mind is as apropos today as the modern treatise of C. A. L. Evans: *Recent Advances in Physiology.* This study of protoplasmic irritability traits, definitely refuting the instinct doctrinaires, only elaborates what Ward had outlined fifty years ago. Indeed, we find in Ward's descriptions of nerves as "protoplasmic tracks," along which communication runs in the co-ordination of the parts of a differentiated organism, the explanation of the mental processes in what is now called "functional" or physiological psychology. Later investigations have served merely to amplify the outlines originally presented by Ward.[9]

Today, psychology is indebted to Ward not only for his explanation of the mental processes, but in its various forms of advertising, educational, psychoanalytic, and abnormal psychology, "social" psychology owes much more to him than is generally realized. The social psychologist, following Ward's lead, is attempting to fathom the processes by which group patterns are elaborated, maintained,

[8] See Jesse Barnard: "History and Prospects of Sociology," in *Trends in American Sociology.*

[9] See J. F. Morley: "Trends in Social Psychology," in Lundberg, *Trends in American Sociology* (Harpers, 1929).

and modified; the human "culturologist," in the observation and generalization of them. The writings of such well-known social thinkers as Bogardus, Cooley, John Dewey, Faris, Lowie, J. B. Morgan, J. M. Williams, Bernard K. Young, Park and Burgess, W. I. Thomas, and others, contain similar conceptions of human interests or driving forces. Were he alive today, he would be much gratified to see this decided tendency to extend his principles of interpreting social phenomena into many phases of modern civilization—into the professions, into the sciences, and into the popular thought of the day. Geography, biology, and psychology are tending to become more and more sociological, while economics and political science head the procession of those "social sciences" that take pains to stress the welfare of the group as a whole.

That Ward's viewpoint has infiltrated into the various professions is evident from the fact that a background of "social science" is especially recommended today for those preparing for journalism, the ministry, or teaching.[10] The importance of orientation courses in sociology, to prepare the way for later specialization in business, law, medicine, or education, is becoming more and more recognized by many leading universities throughout the country. It is not only in the higher institutions of learning, however, that the study of social problems has grown in importance, but discussions of social development have found their way into popular thought. Our magazines today are replete with articles on "planning," "progress," and "social control," while such books as Beard's *Whither Mankind* and Bury's *Idea of Progress* illustrate the vital interest

[10] Jesse Barnard: "History and Prospects of Sociology."

now portrayed in theories of social evolution. Ward's teaching, that social controls are not dependent upon "revelation" or upon "natural law," but merely the artificial product of a particular age, or civilization, has permeated the entire fabric of the social philosophy of our time.

Ward has been severely criticized for his theory of "Social Forces," but a glance at some of the works of outstanding thinkers on social problems will reveal that many of them, whether or no, have followed his ideas in suggesting such "forces" or motives to account for social phenomena. Categories of wishes, desires, or needs are still looked upon as mysterious causes or "forces" of action. Even Sumner and Keller, for instance, who are suspicious of psychological concepts and any theory of "motives," have themselves contributed their four motives of "love," "ghost-fear," "vanity," and "hate." Professor Small, one of the American pioneers in Sociology, felt the necessity of setting up a system of individual "interests"; similarly, Thomas has his four "wishes"; Hart, his "desire to function"; Bushee, his "set of desires"; and Allport, his "biological need." Giddings has made immortal his "consciousness of kind" as the basis of social behavior, while Cooley has emphasized the importance of "primary groups and ideals" as constituting the chief motive forces of social development.[11]

It is, of course, not possible to trace the influence of Ward's theories directly, but it is significant that his concept of social forces was especially prominent in American

[11] Cf. J. F. Morley: "Trends in Social Psychology." See also Pitirim Sorokin: *Contemporary Sociological Theories* (Harpers, 1928), pp. 636-645.

sociological thought during the first twenty years of the present century, and is still a live topic. From the classic works of Small and Vincent, Franklin H. Giddings, Simon Patten, in the 1890's, to Edward A. Ross' *Social Control*, at the turn of the century, there was a distinct tendency to interpret social phenomena in terms of fundamental human desires. Furthermore, in the early writings of Thomas N. Carver, the well-known Harvard Economist, there is a general line of reasoning closely resembling Ward's. Since the War, the concept of social forces has flourished particularly in the works of Charles Ellwood, Blackmar and Gillin, Graham Wallas, Park and Burgess, and F. A. Bushee.[12]

We have become so accustomed, today, to the idea of using Science as an aid to social development that few of us realize our debt to Ward in this respect. He not only expressed this idea in his *Dynamic Sociology* (1883), but elaborated it in his *Psychic Factors of Civilization* (1893), and emphasized it further in his *Applied Sociology* (1906). Ward's thesis, to effect changes, based upon prediction of the future in terms of scientifically ascertained probabilities, constitutes the basis of applied sociology today, as may be seen from a recent book by Shenton: *The Practical Application of Sociology.* Shenton attempts, however, to omit Ward's ethical concepts of "happiness" and the "greatest good," but finds it exceedingly difficult to formulate a system of social control without them. Indeed, despite such efforts as Shenton's to apply sociological principles without ethical valuation, it is significant that Ward's conception of applied

[12] See Floyd N. House, *op. cit.*, Ch. XIX.

sociology as primarily concerned with the minimizing of pain and the increase of pleasure tallies with general usage at present. For example, it is hard to conceive of how the social pathologist could attempt to eliminate various maladjustments in society until he had derived principles on which to work. Willy-nilly, the sociologist must make a number of ethical valuations; he assumes certain practices to be antisocial, else why try to weed them out? However nonethical or objective the *methods* may be, still the ethical *end* is implicit—the hope that he will "improve" society.[13]

Those who have attempted to divorce applied sociology from ethical concepts have only served to confuse the issues, and in the long run find themselves returning to concepts stressed by Ward. For they cannot use any effective "means" to alter society until they know why a particular end is sought. Ward's view, that the values of life—desires, interests, beliefs, etc.—are the essential concern of sociology, is still sound. Such values become the established habits, activities, and folkways. "Pure" sociology tabulates them, while "applied" sociology uses such values, whether material, ethical, religious, scientific, or educational, as standards to be furthered. Few sociologists today would support Ward's pleasure-and-pain theory as the basis of social action, but it is probably safe to say that most of them agree with him in principle. Hertzler, for instance, has taken the "new ethics" of Ward to mean relative, objective, universalized standards of society as a whole; while Sapir and Hobhouse interpret his "happiness" principle in the guise of a balanced, har-

[13] Cf. Reid Bain and Joseph Cohen: "Trends in Applied Sociology," in *Trends in American Sociology.*

monious, long-time adjustment of society to the forces that surround it. Other writers, although omitting such words as "happiness" or "greatest good," nevertheless introduce ethical ends into sociology when they suggest means toward the betterment of mankind, or the improvement of our economic order.[14]

Social thought of the present time is indebted to Ward not only for his ethical concepts of social development, but the influence of his organic concept of society permeates much of recent sociological literature. Elaborations of Ward's discussion of the interdependence of all social and physical phenomena are found particularly in the writings of Barnes, Cooley, Dewey, Hobhouse, and James Harvey Robinson. Following Ward's ideas, even such "pure" sociologists as Mayo-Smith, Small, and Thomas have set up first principles and working hypotheses on social change, social organization, and social control that form the basis of applied sociology. Some modern economists like Stuart Chase, B. M. Anderson, J. A. Hobson, and R. G. Tugwell also hold the organic view that their science is merely one phase of harmonious social development. Similarly, it is evident from the works of such men as Professor Laski of the University of London, and Dean Pound of Harvard, that political science and jurisprudence are relating their studies to other social sciences. It is significant, too, that such noted anthropologists as Herskovitz, Kroeber, Goldenweiser, Wallis, and Willey emphasize the sociological, rather than the individualistic, viewpoint in their writings. In truth, all the social sciences now show a definite tendency toward integration, and are

[14] *Ibid.*

directing their researches not within one narrow field, but toward the melioration of the ills of society as a whole.[15]

Thus, in the most significant development of the present time—the displacement of the particularistic by the organic viewpoint in social philosophy—the influence of the writings of Lester Ward is strongly felt.[16] He lives again today in the hearts and minds of all those leaders of society who are trying to improve the lot of Mankind, to make us masters of destiny instead of slaves to the caprices of Fate. In the range of his intellectual interests, the number and variety of his original contributions to science, and his great power of generalization, Ward has been compared to Aristotle. In his emphasis upon the psychic factors in civilization, through which human progress may be artificially controlled, he laid the foundation-stone of modern social philosophy and gave us a vision of a social order, not in some far-off Utopia, but one that we can reach through the intelligent use of the forces within and around us.

CHAPTER VII

SUGGESTED LIST OF READINGS

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Barnes, Harry Elmer: *History and Prospect of the Social Sciences* (Knopf, 1925).

Bernard, Luther: *Fields and Methods of Sociology* (Long and Smith, 1934).

Bogardus, E. S.: *History of Social Thought* (U. of S. C., 1922).

[15] *Ibid.* Compare Dorothy Gary: "Developing Study of Culture," in Lundberg: *Trends in American Sociology.*

[16] See *American Journal of Sociology,* Vol. XIX, July, 1913, pp. 61-78, for a series of tributes of esteem written at the time of Ward's death by his colleagues.

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Chapter VIII

JOURNALISTIC EDUCATION AND THE SYNOPTIC VIEWPOINT

One of the most outstanding instances of the trend toward the stressing of the synoptic viewpoint in contemporary social philosophy is found in the field of education for journalism. Leading schools of journalism throughout the country are revamping their curricula to enable the student to take his place in the world, not as a mere technician, but as a man of broad vision who can interpret intelligently the mass of conflicting facts that surround him on all sides.[1] These developments are a striking

[1] On this point the writer has had some interesting correspondence with heads of schools and departments of journalism in various parts of the United States. He is especially indebted to the following both for suggestions and pertinent material: Eric W. Allen, Dean, School of Journalism, University of Oregon, Eugene, Oreg.; Willard G. Bleyer, late Director, School of Journalism, University of Wisconsin, Madison, Wis.; Carl W. Ackerman, Dean, Graduate School of Journalism, Columbia University, New York City; Baker Brownell, Professor of Contemporary Thought, Northwestern University School of Journalism, Evanston, Ill.; Franklin Banner, Director, Department of Journalism, Pennsylvania State College, State College, Pa.; Ralph D. Casey, Chairman, Department of Journalism, University of Minnesota, Minneapolis, Minn.; Ralph L. Crosman, Director, Department of Journalism, University of Colorado, Boulder, Colo.; Gayle C. Walker, Director, School of Journalism, University of Nebraska, Lincoln, Neb.; Frank L. Martin, School of Journalism, University of Missouri, Columbia, Mo.; F. L. Mott, Director, School of Journalism, University of Iowa, Iowa City, Iowa; C. E. Rogers, Head, Department of Industrial Journalism, Kansas State College, Manhattan, Kans.; F. S. Siebert, Assistant Professor of Journalism, University of Illinois, Urbana, Ill.; O. W. Riegel, Professor of Journalism, Lee School of Journalism, Washington and Lee University, Lexington, Va.; J. L. O'Sullivan, Director, Catholic School Press Association, 1131 West Winconsin Avenue, Milwaukee, Wis.

vindication of the views of Dr. Joseph A. Leighton, who has argued for a new ideal of liberal education, to help the student regain the lost vision of the unity of knowledge. As a guide to the "vigorous" plan of liberal education, he says, "we must take this principle—that the various departments of human knowledge have their force, their unity of spirit and aim, in the incessant longing and striving of the spirit of man for comprehensiveness and harmony in his mental and social life and activity." [2]

It has generally been conceded that our college students, both journalistic and otherwise, have been fed largely upon a diet of facts, assimilated just long enough for them to earn the required credits. We have placed so much stress upon the immediately useful that the narrow specialization resulting has left little room for the correlation of general knowledge into a coherent social philosophy. In our one-sided education, we have trained students how to make a living, but we have not taught them how to live. Intent upon teaching them the detailed working of the parts, we have neglected to show them the significance of the whole. All over the country, our professional schools have been turning out skilled artisans in law, economics, journalism, and the like, but only now and then has a real artist appeared among them. We have fact-finders and appraisers galore, but few there are who have been able to use the great masses of facts for the improvement of society. In short, we have crippled the imagination of our students and have caused them to lose appreciation of the higher values that enable the individual to enjoy life at its fullest.

Furthermore, our philosophers, who should have been leaders in cultural thought, have adhered so slavishly to

[2] *Individual and Education* (D. Appleton, 1928), p. 169.

the methodology of the natural sciences that they have wandered into a maze of conflicting details and hair-splitting definitions. It is not strange that we have no great contemporary philosophy when our philosophers have been kneeling before the shrine of scientific "facts" and have failed to develop the significance of their results. It has fallen to the lot of Biology, long the hand-maiden of abstract physical theory, to furnish the light that has led philosophy away from the bypaths of purely descriptive analysis into the perception of the social categories as the basis for the understanding of human values. In the opinion of Dr. John Dewey, much of our philosophy must be reconstructed from this point of view. He looks forward to an integrated synthesis in philosophy in agreement with modern science, and related to actual needs in education, morals, and religion. Deeply impressed with the intimate connection existing between present-day scientific thought and the social sciences, Professor Dewey believes that the next great movement in philosophy will have the social sciences as its basis, with less and less adherence to the teachings of the mathematical and physical sciences.[3]

There is, indeed, no longer a place for the one-sided education and thinking of the past. The radical changes now taking place in Biology, Psychology, and Physics have demanded a complete revision of our ways of thinking and made obsolete the mechanistic preconceptions which formerly held sway over the minds of the Intelligentsia. In Biology, as we have already seen, scientific thought is centered around the *organismic* theory; in Psychology, there

[3] See especially his *Democracy and Education, Experience and Nature.*

is a tendency to study the behavior of the organism as a whole; in Physics, the new meaning ascribed to "matter" unites both mechanists and teleologists; while the important changes in the political and economic aspects of modern society have brought about an entirely different order which calls for new methods of approach.

It is no wonder, then, that in the face of such significant movements, it has become necessary to overhaul completely the acadamic curriculum for the teaching of journalism. Recognizing the need for adequately trained journalists to interpret intelligently the complex movements in modern society, the Council on Education for Journalism, headed by the late Dr. Willard G. Bleyer, of Wisconsin, formulated more than ten years ago some general principles of education for journalism. It was held that adequate preparation for journalism must be sufficiently broad in scope to familiarize the future journalist with the important fields of knowledge and sufficiently practical to show the application of such knowledge to the practice of journalism. Upon this point, Dr. Bleyer made the following comment: "Under present conditions the best means of acquiring this essential knowledge and of learning its application is a four-year course of study in a college or university, including such subjects as history, economics, government and politics, sociology, literature, natural science, and psychology or philosophy. Not merely acquisition of knowledge, but encouragement to independent thinking and fearless search for truth, should be the purpose of all courses in preparation for the profession of journalism." [4]

[4] Principles and Standards of Education for Journalism formulated by the Council on Education for Journalism, and adopted by the American Association of Teachers of Journalism and the

This statement was unanimously approved by representatives of leading schools of journalism at that time, and since then has been the inspiration for many important changes in the educational requirements for the degree of Bachelor of Journalism. A pioneer in the movement toward higher education in journalism, Wisconsin, in 1927, was the first School of Journalism to require at least 15 semester credits in advanced courses in the social sciences as part of the journalism major, and to require 20 semester credits in history, economics, political science, and psychology in the freshman and sophomore years as a prerequisite for admission to the School of Journalism.

Another important aspect of improving the standards for education in journalism is the better preparation of teachers of journalism. Several years ago, Wisconsin worked out a plan with the Graduate Division of the Social Sciences whereby teachers of journalism might take the degree of doctor of philosophy in one of the social sciences with journalism as a minor, and might write a dissertation in some subject related to both journalism and his major field. In this wise teachers of journalism may work toward the Ph.D. degree as a means of obtaining better preparation for correlating journalism with the social sciences, and of keeping in closer touch with the students' actual problems. Originally, the professors of journalism in our schools were former newspaper men, generally over 45 years old, whose idea of the function of schools of journalism was merely to teach the technique that they had gained from practical experience. None of them were graduates of schools of journalism, too often

Association of American Schools and Departments of Journalism, on December 30, 1924.

their vision was warped by the irksome details of copy-writing and make-up, while their lack of a proper background in the social sciences made them unable to convey to their students an intelligent interpretation of events in the world around them.

Fortunately, today the installation of sociological-orientation courses in the curricula of many of our leading schools of journalism has shifted the emphasis from narrow specialization to the correlation of knowledge into an integrated whole. One of the pioneers in this movement toward the linking of social science courses with journalism is Dean Eric W. Allen, of the University of Oregon. Writing for the *Journalism Quarterly*, March, 1927, he pointed out that the ordinary four-year courses given in journalism were not only inadequate, but left the student ill prepared to take his place as a leader of thought in the world.[5] The student knew the technique of journalism all right enough, he said, but knew little about his fellow-man or the great movements that have brought about the development of modern civilization. At the time he wrote, professional work in journalism comprises about one-fourth of the student's undergraduate course; the senior year, which should have been the capstone to his training, was the weakest of all—made up of various odds and ends, chosen at random. The Liberal Arts Division of the University of Oregon, like other universities of the time, offered many social science courses from which the student might choose theoretically, but actually the requirements for technical courses made it impossible for him to enroll for more than a very few of such courses.

[5] "Journalism as Applied Social Science," *Journalism Bulletin*, Vol. IV, March, 1927.

Because of such conditions Dean Allen was led to remark: "If journalism is to mean anything more than a mere trade or technique, it must be based upon some depth of understanding. If it is to become a real profession, the thing the competent journalist must understand is the scientific basis of current life, the complex of established principles that underlie any modern, objective, civilized discussion of politics, government, economics, psychology —in short, the art of living." [6] To correct the defects in the student's training, Dean Allen proposed a course in the senior year that would be correlated with the social sciences in such a way that the graduate in journalism would gain a practical application of scientific knowledge in reporting and interpreting the events of the day. Through his suggestion, the Liberal Arts division of the University, and particularly the department of sociology, works closely with journalism students, offering courses of an integrating nature that deal with the application of sound principles to current questions. In this wise, Dean Allen hopes to make the journalist a leader of opinion, not merely a clever word-slinger; to produce a crop of editors, whose thinking is objective and who can be useful in properly molding public opinion—above all, to correlate his knowledge into a forward-looking social philosophy.

Contemporaneous with the introduction of sociological-orientation courses in journalism at the University of Oregon was the installation of the now well-known "Contemporary Thought" course in the journalism curriculum at Northwestern.[7] This course, according to the catalogue, "is designed to give the student a unified idea of the

[6] *Journalism Quarterly,* Vol. IV, March, 1927.
[7] See Bulletin of October, 1933–May, 1934.

world in which he lives." It involves a survey of the sciences, deals with the various forces that govern the action of society, touches upon the aesthetic and cultural aspects of the individual, and aims to co-ordinate the student's knowledge into an intelligible whole. Weekly lectures by authorities in natural science, biology, psychology, history, economics, philosophy, and sociology review the outstanding tendencies in their respective fields, thus giving the student a glimpse of the entire field of modern thought.

Other similar courses go by such names as "Today's Problems" (Iowa), "Contemporary Affairs" (Minnesota), "Current Events" (Syracuse), or "Contemporary Civilization" (Columbia). All these courses are broadly cultural and are designed to increase the student's general knowledge and understanding of the world he lives in.[8] To further the plan of increasing the journalism student's store of general knowledge, many schools of journalism have revised their curricula to the extent of requiring at least two years of college work before admission to special training in journalism. In this respect, the schools of journalism are following the procedure taken by the educational training in the other professions. In the development for law and medicine, for example, originally only a common school education was a prerequisite for admission to law and medical schools. The standard of admission to these special courses, however, has been raised by degrees until now two, three, and sometimes four years of general college work are required for admission.

In truth, it begins to look as if the requirements for

[8] See Vernon Nash: "What Is Taught in Schools of Journalism," University of Missouri Bulletin, Vol. 29, No. 45, December 1, 1928, an excellent analysis of the curricula of various schools of journalism.

admission to schools of journalism will be as strict as those for admission to the other professions. Columbia University led the way a few years ago by requiring three years of college work before admission to the School of Journalism.[9] Upon this general knowledge it built a two-year professional course correlated with various courses in the social sciences. The announcement of this new program for the School of Journalism at Columbia was hailed by leading editors and publishers as being a great forward step in "the production of a kind of graduate who would be a valuable addition to any newspaper in the country." Except for requiring three years of college work for admission to journalistic training, however, the revision of Columbia's curriculum to include courses in the social sciences is identical with what other schools had been doing on a smaller scale. Such revamping of curricula in our leading schools and departments of journalism is evidence of the trend toward a "new journalism," which aims to produce a group of editors well versed in the science of human relationships and adequately prepared to take their places as leaders of an enlightened public opinion.

An interesting explanation of this new point of view in the teaching of journalism was given by Dr. Willard G. Bleyer, in his address, "What Schools of Journalism Are Trying to Do," before the Boston meeting of the American Association of Schools and Departments of Journalism, on December 29, 1930. In this address, Dr. Bleyer, Dean of the School of Journalism at Wisconsin, answered the criticisms of those who have looked upon academic training in journalism as a mere waste of time. "Universities have

[9] See Report of Dean, School of Journalism, Columbia University, October 7, 1933.

spent millions of dollars," says he, "on establishing and maintaining medical and law schools to educate physicians, surgeons, and lawyers. Are journalists less important to the welfare of society . . . than are members of the medical and legal professions? As it has been found necessary to protect society against ignorant, unscrupulous quacks and shysters, is it not equally necessary to protect society against immature, half-educated unscrupulous journalists?" [10]

In the other professions, the student prepares himself from the beginning in a specialized course of training, but to the journalist no such specialization is possible or desirable. "A journalistic education," says the late Dr. H. Parker Willis, former editor of the New York *Journal of Commerce*, in a letter to the writer, "should include practically all information in the world, or as much of it as the journalist can acquire." This is indeed true, for at some time or other the reporter deals with every significant human activity, while the editorial page must touch upon some of the deepest problems of the day. For this reason, a broad, liberal education is essential in the profession of journalism, to supplement the more technical courses in reporting, copy-reading, lay-out, and the like. Under the revised journalism curricula today, even these special courses are not set off in water-tight compartments, but are correlated with the events in the world of actuality. The course in newspaper reporting, for example, is not merely technical, but involves an intensive study of local

[10] *Journalism Quarterly,* March, 1931. See also "Journalism, Technical Training, and the Social Sciences," by Ralph D. Casey, University of Minnesota; "Public Opinion and the Press," by Grant M. Hyde, University of Wisconsin.

news and its significance. The course in copy-reading, likewise, is not simply practice in writing headlines or correcting errors, but it teaches students how to evaluate the news that comes from all parts of the world in the light of its significance to a particular set of readers. The course in current events is not mere aimless discussion, but a systematic study of matters of economic, political, and social significance worthy of editorial comment. The course in editorial-writing itself is not devoted to teaching students how to write flippant phrases or biting epigrams, but aims to train them how to interpret intelligently the complexities of our modern civilization. And, finally, the course in principles of journalism—the particular target of critics of academic education in journalism—is not a "one-track" history, but a comprehensive survey of the influence of the newspaper upon the opinion, morals, tastes, and standards of living of its readers. All these courses, then, not only train the journalism student in the technical phases of his profession, but give him a broad understanding of the world in which he lives.[11]

This very fact that a broad background of general knowledge is essential to the journalist has led many to scoff at formal academic instruction in journalism, arguing that the ordinary four-year Liberal Arts course would be sufficient. But Dean Bleyer takes issue with such critics in no uncertain terms. "After thirty years as a university instructor," says he, "I am convinced that our college courses in subjects other than journalism do not result in developing in the average student the ability to think logically and to apply intelligently what he has learned to

[11] *Ibid.*, pp. 39-41.

his work as a reporter, copyreader, or editor." In his opinion, what schools of journalism are trying to do is "to teach students how to think straight about what is going on in the world at large, and how to apply it to understanding and interpreting the day's news." Instead of taking away "four precious years that should be devoted to securing a liberal arts education" (as one editor has contended), courses in the "new journalism" give greater significance and meaning to liberal arts studies in showing students how to apply their general knowledge to the events and problems of today.[12]

This trend in the teaching of journalism is closely allied (although unconsciously) with the tenets of modern idealistic philosophy, which, according to Professor Clifford Barrett of Yale, no longer exists as a creed, but is rather a means of interpreting human experience.[13] Resenting the one-sided method of thinking that would explain man's behavior in terms of the purely mechanical or utilitarian, the idealist philosopher holds that the world is intelligible to man because its order is also the order of his rational life. The practical and the ideal phases of life are not necessarily opposed, for it is only through purpose and value, says he, that life has significance. The idealist philosopher does not regard man merely as the resultant of certain physico-chemical forces, but considers the parts in relation to the larger whole; namely, the individual as totality. This individual, he believes, with the aid of intellect, guiding and directing his activities, realizes in some way the order of the universe.

[12] *Ibid.*, p. 43. Cf. Dewey: *Democracy and Education,* esp. Chs. II, XI, XXI.

[13] *Contemporary Idealism in America,* Introduction (Macmillan).

So, today, the revised curricula of our leading schools of journalism manifest the belief that purely utilitarian studies are one-sided; that by stressing in detail the parts of knowledge the meaning of its significance as a whole is lost. As striking indication of the new point of view in the teaching of journalism, Columbia has recently made its School of Journalism strictly a graduate school which provides for the linking of liberal studies with technical instruction, with *training for public affairs* as the major objective. Besides the regular professional courses, all students will be required to elect additional graduate courses such as public law, history, government, economics, politics, statistics, and sociology. Most significant is the statement that specialized writing will be discouraged, and that the changed curriculum is designed primarily to enable the student to understand the complex forces that govern the world about him. "Our journalism students," says Dean Carl Ackerman of the Pulitzer School of Journalism at Columbia, "need an idealism and a balance which can not only withstand the stress of experience, but aid in strengthening the idealism of a profession which is repeatedly shaken by the intimate contact with the weaknesses and failure of human institutions." [14]

More and more educators are realizing the inadequacy of un-co-ordinated knowledge; we have been clever at analysis, but blockheads at synthesis, training only part of the man. Writing in *School and Society* for July 13, 1929, Dr. W. H. Kilpatrick points out that too many teachers still cling to the old eighteenth-century dualism, holding

[14] Bulletin No. 50, Graduate School of Journalism, Columbia University, September 12, 1936, p. 8, summarizing the philosophy of education in journalism upon which the school is based.

that ideas do not function in contemporary life, thus denying their very stock in trade. But the denial of all validity to conscious action, idea, intention, purpose, says he, "makes it impossible for us to live as humans." Such methodology of the educational scientist as statistical data, intelligence tests, correlations, etc., are invaluable, but they are only means to an end. The technical aspects of education and the synoptic vision of philosophy are complementary. Both are needed if life and education can successfully face the problems of modern existence. The remarks of Francis Bacon, centuries ago, are equally applicable today. He said that science alone is not enough, there must be a force and description *outside* the sciences to co-ordinate them and point them to a goal.

A particularly striking plea for a broader outlook in education appears in Bulletin No. VI (May 11, 1927) of the Bureau of Research, Ohio State University. This emphasizes the need for closer co-ordination between the viewpoints of both scientist and philosopher. "Without scientific methods," says the bulletin, "philosophical inquiry lacks interpretation. Without science, philosophy is uncertain, conflicting, unconvincing. Without philosophy, science is blind, unorganized, petty." [15] Thus both are necessary, and their uniting is the only adequate means toward a broader education, one that would be truly effective in helping to control the conflicting forces in contemporary society.

In this connection, it is interesting to note that in the teaching of journalism today our schools are no longer content with a one-sided education which warps the mind,

[15] Educational Research Bulletin, top of page 208, comment of the editor.

but through their emphasis upon orientation in the social sciences they aim to give the student an integrated course of training that will enable him to see life whole. Courses are arranged in the light of the new psychology which holds that the individual and his behavior can be understood only in the light of the influence of *mind* upon the course of events. With this belief is linked the philosophy of value which bids fair to replace the deadening fatalism of the mechanistic theory that has until recently been the guiding star of society. The revised journalist curricula walk hand in hand with these forward-looking theories, and open to the student vistas wider and far more pleasing than those seen through the study of the purely technical aspects of "make-up," headline writing, or the mechanical details of composition.

More and more it is being recognized that the solution of the complex problems of human society demands the use of intelligence in the direction of human affairs. The fact that value judgments are necessary in enabling us to solve these problems is appreciated not only in contemporary psychology and philosophy but by contemporary sociology as well. "In the chaotic conditions of society today," says Dr. Charles Ellwood of Duke University, "it is more and more important that our leaders of thought be well informed and have the proper appreciation of values." Slavish adherence to the methodology of the natural sciences will not pull us out, but the way out, he adds, "is that of a broader method supplemented by critical scholarship"—i.e., knowledge of all that men have thought or done along a given line, logically trained minds turn loose

on all this thinking of the past or present, to discover, if possible, the way to truth." [16]

In his recent book, *Methods in Sociology*, Dr. Ellwood makes some remarks intended primarily for the sociologist, but which apply equally as well to the situation which recently prevailed in the field of journalism. "It has been a reproach made against American sociologists," says he, that they are sadly lacking in scholarship. Too many of our men have confined their attentions to one narrow field, missing the broader reaches of his intellect, and out of touch with the finer problems of life," so the average journalist, intent on the mechanics of his craft, has neglected those things which would give him a fuller understanding of the forces at the basis of modern society. "Social scientists," continues Dr. Ellwood, "cannot become experts on biological and psychological questions, but they should know and keep abreast of the best work in these fields. Social scientists are surely not prepared to interpret social behavior or movements until they know the best that modern biology and psychology can teach them regarding human nature. Even more do social scientists need to know human history in order to know their human world." [17] Substitute for "social scientist" the word "journalist" in the above and we have the situation admirably summed up for the field of journalism.

The shift of emphasis in the teaching of journalism from narrow specialization to a broad background in the social sciences is a striking vindication of the above remarks, and the restoration to a new dignity of the once-maligned

[16] *Methods in Sociology* (Duke University Press, 1934), Ch. I.
[17] *Ibid.*

"liberal" education. This shift of emphasis has been made possible by the fact that a large proportion of students enter the universities with practical experience in newspaper technique, and by reason of the publication of numerous textbooks on various phases of journalism proper. With such textbooks at hand, and students already familiar with the technique of journalism, much more time can now be given to the cultural phases of the student's knowledge, and its application to the problems of today.

In this wise our leading schools and departments of journalism are providing a system of training that will make our future editors and publishers not merely adept phrasemongers or lopsided specialists, but real leaders of thought. Through the inspiration gained from their intellectual odyssey into the fascinating lands of history, sociology, economics, psychology, biology, art, and philosophy, they will have a clearer insight into the intricacies of modern society, and will be in a position to contribute more effectively to the amelioration of the many ills to which it has become heir. By such means we will not yet have attained the millennium, but at least we shall have produced a group of leaders sympathetic with the shortcomings of their fellows and dedicated to the service of mankind.

CHAPTER VIII

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Chapter IX

CULTURAL ANTHROPOLOGY AND THE "NEW HISTORY"

The necessity for a broad, general outlook to interpret properly the various conflicting forces in the development of society, and a growing recognition of the significance of subjective factors in civilization, are likewise characteristic of contemporary thought in anthropology and the so-called "new history." Despite the pride we take in an "enlightened" age and our boast of a "superior" civilization, anthropology shows that our civilization is not necessarily superior to the earlier cultures just because we happen to possess a great body of highly specialized knowledge. It is true that we surpass other civilizations in industrial technique and manipulation of machines, but in the higher realms of art, religion, ethics, and philosophy, our superiority over peoples of antiquity is by no means definite or indisputable. Despite the attempts of certain anthropologists and disciples of the "new history" to base their studies upon strictly "scientific" principles—i.e., leaving out value concepts—nonetheless they have found it impossible to formulate theories of cultural development without taking into consideration the part played by man's intelligence in adapting himself to constantly changing surroundings.

Dr. Clark Wissler [1] emphasizes the importance of his-

[1] Chapter on "Anthropology," E. C. Hayes: *Recent Developments in the Social Sciences* (Lippincott, 1927).

torical perspective in the study of anthropology and scores those investigators who have dealt too exclusively with a small portion of humanity, residing in one place. Under such conditions, says he, no perspective is possible —one might just as well try to understand the behavior of man by the study of a single individual or by introspection alone. Anthropology needs a world view. Just as psychology found itself by turning its eyes outward to wider horizons, so anthropology must do likewise and study mankind in the light of all factors which have contributed to the evolution of culture.

To understand the nature and development of human social life, its origin and direction, anthropology has found it necessary to study carefully the "culture" of various races. In the opinion of Dr. Charles Ellwood,[2] it is the failure to recognize the importance of culture in human social life which has led to the neglect of the distinctively human factors in society, and to the futile attempts to interpret the group behavior of human beings in the same terms as those used to explain the behavior of the lower animals.

Both anthropologists and sociologists have found that the nature of human society and the development of human life can be properly interpreted only by an understanding of the differential factor which distinguishes all human groups from animal groups. This differential factor is culture, defined as the "capacity for toolmaking and institution-making." Culture is distinctively a human factor, arising only when individuals *learn to modify* their conduct through what is communicated to them by other

[2] *Cultural Evolution* (Century, 1927).

individuals by means of speech, writing, or other means toward the exchange of ideas. Culture, therefore, depends upon the interchange of experience, upon language in some form. For this reason, cultural evolution has been considered the evolution of "civilization"—that is, the knowledge, skills, and standards utilized in the making of tools, institutions, and social customs.

Through the concept of culture, then, anthropology is able to give an intelligent interpretation of modern life, based on a *perspective of the whole*, from earliest times, using the contributions of the various social sciences in its attempt to formulate a world view. In the opinion of Wissler,[3] this is one of the most significant trends in anthropological research—the understanding of a culture as a living, functioning complex, which makes it possible to formulate effective problems of social behavior. Through the use of what he calls the "trait complex," it is possible to compare the various elements that go to make up cultures of different peoples, speech, material culture, art, mythology, religion, social organization, property, government, and warfare. Through this concept, whether one studies the culture of a vast continent or that of a handful of natives, the culture observable at a given moment, will be equally susceptible of analysis into trait complexes of consistent behavior.

Culture has a distinctly mental origin: It is made up of the "vast social complex of human inventions." But invention, whether physical or social, depends in the final analysis upon the formation of a pattern or *concept in the mind*. An invention must be imagined in thought before

[3] See his *Man and Culture* (Crowell, 1923).

it is executed. Man makes over his world in imagination before he undertakes deliberately to make it over in reality. An invention, therefore, is fundamentally a mental pattern formed in the mind of the individual before it becomes a physical tool or social relationship. Such mental pattern, in turn, must be diffused. All culture, therefore, is learned; adjustments or inventions are learned by the experimentation of one or more inventive individuals and passed on to the groups as a whole.

Thus the cultural process is essentially an educative process, from the making of the simplest tool to the most intricate design. Consequently a study of the educative process is in reality a study of the growth of culture. Through the development of scientific knowledge, man has at his disposal a most effective means of speeding the cultural process, and of directing his steps toward the accomplishment of things formerly considered impossible. Culture, then, is a distinct creation of man—the result of man's intellectual reaction to and utilization of his environment. Through it man has gradually learned how to adjust himself to his surroundings and to utilize the materials of nature for the satisfaction of his growing wants. Through inventive processes, man has become master of his destiny, and through the study of the mental processes that govern conduct he is gradually learning how to control his own behavior.

Anthropology is not only engaged in tracing the cultural concept, but it enables us to understand the causes of the differences between races and groups and the varying conceptions of right and wrong. Through a study of the development of customs, folkways, and taboos of primitive man, we are able to formulate new ideals of conduct,

and to free ourselves from slavish adherence to tradition. In the heritage of the past, we may find much that is useful to us in shaping the conduct of future generations.[4]

Some anthropologists and historians are inclined to the belief that single forces determine the course of the cultural history of races and nations. One group upholds the doctrine of economic determinism; another attributes an all-powerful influence to geographic factors. Both economic and geographic factors undoubtedly play an important part in shaping a culture, but each is only one of many contributing factors toward its development. Franz Boaz contends that the cultural history of any particular area shows that the geographical conditions by themselves have no creative force, and are no absolute determinants of culture.[5] For example, before the domestication of the horse, the western prairies were sparsely settled due to the poor food supply. But when the Indians began to use horses, their whole mode of life changed, for they were able to hunt buffalo, and many tribes moved west, giving up agriculture almost entirely.

The same principle is applicable to the settlement of America by the white man. Agriculture and herding were adapted to the new environment, with the particular type of culture playing a different role in each case. They compelled man to adapt his own life to new conditions, and as a result served to modify the culture in certain important respects. That the environment does not necessarily create a new culture is evident from the great difference

[4] See A. A. Goldenweiser: *Early Civilization* (Knopf, 1922), especially Introduction, pp. 3-27.

[5] See his *Anthropology and Modern Life* (Norton, 1928); also his *Mind of Primitive Man,* especially Ch. VI (Macmillan, 1911).

between the culture of the Eskimo and the inhabitants of Siberia just across the Bering Strait, where geographic conditions are nearly identical. Geographic conditions exert a limiting or modifying influence upon culture, but many different types of culture are found adjusted to similar environment.

The economic determinists make the same faulty assumptions of which the geographic determinists are guilty. Boaz cited proof of this from the simplest cultural factors. There are many tribes of fishermen and hunters, says he, whose economic life is built upon the same foundation, yet they differ in customs and beliefs. For example: African Bushmen and Australian Aborigines; the Indians of Alaska, Chile, and the Island of Saghalien are comparable in economic resources, but their social organization, beliefs, and customs are diverse. He finds nothing to show that they are due to economic differences—rather the use of such resources "depends on all other aspects of cultural life." In Boaz's opinion, economic life is just as dependent on invention, social structure, art, and religion as these factors are upon economic determinants. Economic conditions are causes of these as well as effect. Such subjective factors as social bonds and conflicts, emotional life, and artistic activity are only incompletely reducible to economic factors. As the geographic environment acts only upon a culture, modifying it, so economic conditions only serve to modify a civilization already existing.

Furthermore, culture cannot be considered apart from the individuals who compose it. It is true that an account of culture in general need not refer to individuals, argues Wilson D. Wallis,[6] but it does not follow that the indi-

[6] *Culture and Progress* (Whittlesey House, 1930), Ch. I.

vidual plays no part in culture phenomena, or that, since cultural development is continuous, individuals are, therefore, not responsible for the culture continuum. The culture, however, determines activities and supplies the stimuli that spur individuals to action. Inventions are the outstanding results of reactions to stimuli, constituting the high point of intellectual achievement and of conscious endeavor to cope with a given set of conditions. They are based upon a continuity of thought, in that the way is prepared by previous accomplishment and are limited by the demands of the culture. It has been found that, even in savagery, initiative and originality stimulate new purposes and new concepts. The mechanists would have us believe that individual behavior is entirely a response to group stimuli, but the history of society is replete with instances where certain individuals exhibit the "larger mind" and help to shape group concepts in certain definite directions.

In the very concept of "progress," which both anthropologists and the supporters of the "new history" like to talk so much about, there is involved the question of achievement, and that in turn means the use of the mind in overcoming various obstacles. It is by the overcoming of obstacles, "kicking against the pricks," that man has risen to present heights. When he ceases to struggle, says Wallis, "he will be a spirit akin to the clam, in a similar congenial environment." Astronomy tells us that in the course of a few billion years the earth will become uninhabitable, but Wallis refuses to believe that it will be more purposeless just because the human race knows that within a reasonable space of time it will be blotted out, together with the destruction of all its hopes, endeavors,

and achievements. "While life remains," says he, "*purpose remains*, and the wills of men can be directed toward the realization of their purposes within whatever bounds fate prescribes." [7]

The very concept of "progress" presupposes the realization of purposes. These operate in a world—social, individual, or physical, according to the point of view—which demands constant adaptation to changing conditions to insure the fulfillment of purposes. Just because civilized man has a greater store of scientific knowledge which he can employ toward useful ends does not necessarily mean that he realizes his purposes to a greater extent than does the savage. To determine this point we are forced to employ value concepts. It is true that present-day civilization has given us more material things, but in turn it has created more needs and more dissatisfactions. Wallis aptly contends that we cannot properly interpret the life of the savage if we do not comprehend the *inner aspects* and fail to grasp the *meaning* which it has for those who take part in it.

The study of cultural anthropology, then, is in substance a study of values and purposes.[8] The values which each group tries to conserve are those which it regards as the highest. They vary among men who live under different historical and cultural conditions, but they are values nonetheless. For example, the Greenlander's belief in the conservation of values differs widely from that of the Greek's; the Hindu's from the Christian's; the Oriental from that of the Western races. Yet even in such vastly

[7] *Ibid*, pp. 405-409.

[8] See *Egon Friedell: Cultural History of the Modern Age* (Knopf, 1930), Vol. I, Introduction.

divergent cultures, spheres of purpose are not mutually exclusive, but intersect, and purposes common to individuals can be comprehended on the basis of the values which they contribute.

Strive as it may to study the development of culture "scientifically"—i.e., without regard to individual hopes and aspirations—anthropology has been forced to consider the part played by "incentives" and "drives." True, the individual is a member of a class and subject to its influences, but only by transcending his own narrow circle does life have significance and meaning. Man is constantly striving to rise above himself, to get beyond the petty cares and worries of his immediate existence.[9] The achievements of mankind in art, in industry, in literature, in science, and in various lines of endeavor are all in response to what Boutroux has called the "beyond that is within." [10] As soon as we study humanity with care, says he, "we find that a common trait characterizes all its longings, all its perceptions—the pursuit of something, not only different, but superior—the endeavor to outstrip itself."

Although the theory of "psychical unity" has been disproved as a factor in anthropological research, nevertheless anthropologists have found that the interpretation of ethnological material is essentially a psychological problem, involving an analysis of the motives that have impelled men to act in certain ways and the reconstruction of the history of events.[11] As anthropological research con-

[9] See Wallis, Wilson D.: *Culture and Progress* (McGraw-Hill, 1930), Chs. XXI, XXII.

[10] *Beyond That Is Within* (Duckworth, London).

[11] See Goldenweiser, A. A.: *Early Civilization,* Ch. XIV.

tinues, more and more the aim is to discover how man's ancestors acquired those attributes that distinguish mankind from all other living creatures—in short, what use man has made of his high powers of intelligence. The determination of the nature of the human mind, the factors of its emergence, its range and limitations, the way in which instinctive tendencies come more and more under the control of man's powers of discrimination, and the results of experience—all these, says G. Elliott Smith,[12] are factors "that will in time enable us to interpret the facts of ethnology, the evolution of customs and beliefs, and the *inner meaning* of the history of civilization" (italics mine). Psychology, then, is the unifying principle for the study of mankind.

Smith shows that the emergence of the distinctively human qualities of mind was made possible by reason of the fact that, in certain small generalized mammals, the sense of vision acquired increasing influence in guiding the creature's behavior. The fact that the limbs had not become specialized for a particular purpose, but retained their primitive adaptability, made it possible for them to become fashioned into instruments for performing increasingly complex series of skilled movements. The guidance of vision made possible the acquisition of such skill, while the use of the hands cultivated the sense of touch. More important, however, the stimulation of the animal's curiosity, which resulted in enhancement of visual powers, led it to handle objects and not only to acquire skill and tactile discrimination, but also to learn to *appre-*

[12] Chapter on "Anthropology," in *Evolution in the Light of Modern Knowledge;* see also *Culture and the Diffusion Controversy,* by Smith, Malinowski, and others (Norton, 1927).

ciate the nature of things and events in the outside world.

As man acquired increased ability to appreciate the meaning of the world and its happenings, he gradually obtained the distinctively human powers of comprehension and learning from experience. Furthermore, as these powers developed, the tendency to act on impulses of appetite and instinct became subject to the more powerful control of the intellect and personal experience. The mechanists are correct in saying that the behavior of man and apes is alike so far as the instincts and appetites are concerned. But in Smith's opinion, the great difference depends upon the "enormously greater power of man *to appreciate the significance of events*, and to control his instinctive tendencies, in the light of his acquired knowledge." [13]

Contemporary anthropology is in agreement with the teachings of the "new biology" that the one distinctive quality of living things is that their experience really counts. They gather up the effects of their own past and carry it forward, cumulatively, into their own future. In no other situation does accumulated experience count for so much as in human society, where the experience of numerous generations piles up and is transmitted by tradition. This accumulating stream of tools, symbols, and institutions composing "culture" sets man in a class by himself. In order to understand its real significance in the development of mankind, anthropology has had to give consideration to value concepts—to the *meaning* such objective factors have for the particular race or group under study. As Dr. Clarence M. Case has indicated in

[13] *Ibid., Evolution in the Light of Modern Knowledge.*

his *Social Process and Human Progress*,[14] the study of culture is in truth a study of stored experience for the group, externally in the form of tools and symbols; internally, in the form of corresponding attitudes. The external factors possess meaning to the group only because they enable fundamental drives or wishes to express themselves in those tendencies called "attitudes." In the last analysis, then, attitudes and values have their common meeting place in the activity of the individual members of society.

As the anthropologists have found it necessary to have a world view before they can properly interpret the cultural development of man, so the apostles of the "new history" likewise have felt the need of orientation and synthesis to write an intelligent narrative of past events. The "new history," says Harry Elmer Barnes,[15] requires a broader study of the nature of man and his relations with his natural and social environment. Only in this way will the historian be able to reconstruct properly the various phases of the history of civilization and to study the records of man's gradual conquest of his material surroundings. For this task, he must be thoroughly grounded in biology, physiology, anthropogeography, psychology, and sociology, and specially trained in the social sciences that are of direct concern to the particular aspect of the subject upon which he wishes to dwell.

Barnes' emphasis upon the necessity for a broad, synthetic viewpoint on the part of the historian is in agreement with the trend of thought in anthropology. He rightfully feels that man's culture is too complex for the

[14] Harcourt, Brace (1931).
[15] *Living in the Twentieth Century* (R. R. Smith, Inc.), Ch. XII, pp. 347-381.

historian to have a narrow, partisan view. The "new" historian, in his opinion, can no longer be concerned with tracing merely the history of a party, dynasty, or a single group, but should study the relationship of all these factors to the intellectual development of man, and his reaction to the environment. Historians today, he feels, should be engaged in an effort to interpret historical evolution, to discover what *significance*, if any, attaches to mutations of civilizations and the genesis of social institutions. "The more up-to-date historian can no longer hope to discover the will of God or the ultimate destiny of mankind in the record of the past," he adds, yet he confesses that earlier historians have had to consider significant those events that had relevance for illumination of their own or future generations. The chief value which history possesses, in his opinion, is to aid us "better to understand and control our own civilization." [16] The "new history" has value today in enabling us to trace the genesis of contemporary culture and institutions.

Because of the complexity and uncertainties of present-day civilization, historians of the new school are urged to combine with their scientific precision and wide erudition, creative ability to enable them to reconstruct the pattern of civilizations and to trace the origin of ideas and institutions. As the great diagnostician in medicine is something more than a competent technician, so will the great historian be something more than a mere recorder of facts —he must have a synoptic view, to see things in relation to the whole. He must not only be grounded in the social and natural sciences, but must possess a vision that will carry him beyond the narrow confines of partisan politics,

[16] *Ibid.*, p. 358.

to the wider theme of man's relation to his fellows. No form of knowledge, no type of experience, should be beyond his ken. The "new" historian must be technician, artist, and philosopher, all rolled into one.

Such a high standard for the historian to follow is very admirable, indeed, but unfortunately, Barnes would warp the historian's viewpoint by having him pay attention only to physicochemical factors, disregarding those with any taint of the "psychic" upon them. He tells us that the only proper interpretation of human behavior is in terms of glands, corpuscles, neurones, and strictly mechanical reaction to stimuli. In this he presumes that he is adhering to the tenets of present-day biological science, for which he professes a fond admiration. Evidently, his own philosophical attitude of life, his acceptance of the mechanistic doctrine as the only true one, has so colored his views as to blind him to the fact that contemporary biological thought teaches no such thing.

As we have already seen from our brief survey of the writings of such outstanding biological scientists as J. Arthur Thomson and J. S. Haldane, and others, biology today recognizes that it is impossible to explain organic behavior merely in terms of physicochemical reactions to stimuli. They feel that the biological story is so closely interwoven with the psychological story that the two cannot be separated. The mechanistic historians think they have completely eliminated the psychical factors in their study of the activities of mankind when they regard human behavior as simply mechanical reaction to outside influences. Yet, they overlook the fact, stressed by Dr. E. S. Russell, in *The Study of Living Things*, that "it is not the stimulus that is reacted to, but its *significance*."

Since significance is distinctly a mental concept, their interpretation is after all a psychobiological one. What is responded to, says Russell, is not the stimulus *qua* physicochemical, but the stimulus as perceived; and not the stimulus as perceived, but as *interpreted.* Hence biologists must look for the meaning of the presented situation, and the extent to which single elements of it may be treated as symbolic of the whole situation. And so the historian also, if he is to interpret properly the course of human evolution, must discover what significance attaches to the changing character of civilizations, and consider it in relation to a pattern previously formed in the mind of the historian himself.

Barnes seems to feel that he is following Darwin closely in urging a strictly biological approach to the evolution of cultural phenomena. But he appears to overlook the fact that Darwin himself made no attempt to place biological and psychological phenomena in airtight compartments. Nor have contemporary zoologists in their studies of birds and mammals been able to disregard the part played by their "power of perception," "intelligence," and adaptation to a given set of conditions.[17] If this is true of the lower animals, it is so much the more true of man.

As Lloyd Morgan points out in his contribution to *Evolution in the Light of Modern Knowledge*,[18] the biological story comes in all along the line from first to last as accompanying—not causing or being caused by—the psychological story. Under this twofold interpretation, says he, in one respect, we deal with the evolutionary story from

[17] See Chapter III, *Supra;* also Chapter II.

[18] Blackie and Son (1925), Ch. IV, pp. 107-163.

embryo to adult in terms of *mental reference;* in the other, in terms of physical or physiological influence. But development does not become psychological until a point of prospective reference is reached. This affords a new starting point, in which "purpose," or some reference to the future, plays a part.

This point not only has a particular bearing upon anthropology, which is concerned with biographies of mankind, but upon history, which is an attempt to interpret such biographies in the light of modern knowledge. In his studies of the development of culture, G. Elliott Smith seeks to find out how man has been evolved from some prehuman ancestors.[19] Piecing together a story of mammalian progress along our line of descent, he stresses the earlier dominance of the sense of smell and later the dominance of sight. This implies mental reference to objects in the external world and hence falls within the province of psychology. To Smith the development of man's intelligence proceeded somewhat as follows: The higher senses—hearing and sight—widen the field of reference and quicken behavior in relation thereto, permitting a freer aboreal life. As a consequence of reference to coming events and a consistent endeavor to attain wider ends, man gradually attained to social life with its fuller and richer community of reference. At the same time, the various physicochemical factors are at work in the mechanical reaction of the living being to its environment, all of them subject to the substantial unity of the organism as a whole.

Thus the biological and psychological stories constant-

[19] "Anthropology," pp. 263-287, in *Evolution in the Light of Modern Knowledge.*

ly intermingle. At one time, the anthropologist and the historian are concerned primarily with psychological factors, taking concurrent biological factors for granted; at another, their work is distinctively biological, taking concurrent psychological factors for granted. If the mechanists would only realize this fact—that each story complements the other—there would be no occasion for dispute, and the atmosphere would be cleared for a more thorough understanding of all the factors that contribute to the make-up of that complex being, *homo sapiens.*

Despite their criticisms of the older historians for clinging to outworn concepts, the "new" historians, as Dr. Fred J. Teggart shows,[20] themselves cling to the ideas of eighteenth-century philosophers. Adherents to the philosophy of Descartes set up an "ideal" history upon which historians attempted to weave the thread of their narrative in conformity with a set pattern. So today, modern historians find it necessary to make extended surveys of historical events, the making of a "synthesis." Despite their insistence upon calling their methods the "new history," the methodology of the newer school is closely related to that of the older historians. The contemporary historian sets out from a body of documents and arrives at a group of isolated "facts," of which he wishes to make use; the older historian began with a given situation and proceeded to explain this in terms of the sequence of events leading up to it; he considered the present situation in light of its antecedents; the new historian considers a series of happenings in and for itself. In either case, however, these documents, or "facts," give him only isolated particu-

[20] *Theory of History* (Yale, 1925).

lars, and he is forced to introduce a preconceived pattern around which he may weave the un-co-ordinated elements.

To make such a synthesis, to build up the separate elements into a connected narrative, the modern historian must envisage the series of events as a "whole." This "whole," however, is not a totality of all that has taken place, says Teggart, but the selection by the historian of certain data arranged so as to convey not the actual complexity of happenings, but such happenings as the *historian considers* of importance in such a series of occurrences. The "synthesis," then, of the modern historian is as much of a personal presentation as the narrative of the older historian whom he condemns. Both are engaged in the construction of a work of art. Despite his avowals of impartiality and strictly "scientific" procedure, the "new" historian is influenced by the ideas of the time in which he lives, and cannot afford to neglect the subjective features in his study of mankind any more than the older historians whom he has been inclined to disparage for being "unscientific."

The leader in the movement for the "new history," James Harvey Robinson, like Barnes, would weed out any consideration of psychic factors in the study of civilization.[21] Aiming to make history "scientific," he would bring to bear upon human affairs that particular form of knowledge prepared by the biological and physical sciences. He urges us to a thorough reconstruction of our minds, to permit certain historical factors to play a part in our thinking, to develop the scientific habit of thought toward human affairs. In his opinion, the new history aims to use the historical materials in such a way as to

[21] *The New History* (Macmillan, 1916); *Mind in the Making* (Harpers, 1921).

promote an "intellectual regeneration" or "change of heart." But this "new history" differs from the old merely in selection of what he considers pertinent "facts" to be studied. The new history is after all simply a narrative of the old form in which the facts presented have been selected *with a new purpose in view.*

Robinson has taken the older historians to task because of their concern with such concepts as "progress," "decline," "human nature," and "civilization." But the "new history" itself is directly concerned with "progress" and "betterment" and puts implicit faith in a "natural order," a mysterious impulse which somehow furnishes the impetus to the growth of various forms of culture. Though professing to have no use for value concepts in the study of history, nonetheless Robinson feels that above all else the historian of the new school should "co-operate with the vital principle of betterment." In spite of himself, then, the new historian is a philosopher, and in his calmer moments must realize that for all his tirades against the introduction of "psychic" factors into the stream of history, he cannot avoid them if he would.

The "new" historians assume that progress is "natural," independent of "accidental" circumstances of which history and experience are constituted. By divorcing Providence from interference in the affairs, and holding that the affairs of the universe are carried on according to "immutable laws," the "new" historians think they are strictly "scientific." But in their assumption of a "natural order" and a belief in an inevitable "progress" in the affairs of men, are they not being as metaphysical as they accuse the older historians of being? The crux of the difficulty, as Teggart has pointed out, lies in the failure to distinguish

progress *per se* and a belief that "whatever is is right" and that "all happens for the best," but a belief in the possibility of progress leads us to ask: How may this possibility be realized? Furthermore, it leads us to understand, he adds, "that if human advancement is to be assured, the activities of men must be directed *by conscious effort* in some one main direction." [22] Like the anthropologists, the historians of the new school must recognize the fact that culture is after all dependent upon various subjective factors, difficult of actual measurement. The objective measurements of the anthropologists and the historians—tools, institutions, economic and political movements, etc.—render more definite some of the symbols of subjective life, but these remain meaningless unless interpreted by the intuition of the observer himself. Strive as they may, both anthropologist and historian cannot escape the fact that imagination and insight are the prime movers in society—objective scientific data furnish the tools, but it requires a mind to carry things through.

Anthropologist and historian, then, have found that the behavioristic interpretation of human behavior is inadequate for the explanation of the rise of culture and to account for man's achievements in the higher reaches of the intellect. They have been forced to consider the close relationship of subjective personality with objective culture, to turn from a study of the purely mechanical aspects to the structures and accumulated resources of society transmitted through the educational process. Starting out with the assumption that a study of the physicochemical aspects of man's behavior would explain his

[22] Fred J. Teggart: *Theory of History* (Yale, 1925).

mastery of the sea, the air, and land, and his command over the forces of nature, they have had to take into consideration not only the reaction to mechanical stimuli but all those factors that have helped to make man what he is today.

Man's "original nature" is not so simple as it was once thought to be. It turns out that almost all human behavior is *learned* behavior, dependent upon the structures, processes, and accumulated heritage of society. Man has invented different culture systems and devised various ways of adapting himself to environment in the attempt to satisfy the cravings within for something beyond himself. Despite their refusal to recognize the concept of purpose in the rise and fall of civilization, historians have unwittingly introduced the telic viewpoint when they consider the study of history as a means toward the "betterment" of society. In their ideas of "progress," they envisage a greatly improved society for the future; the new historians would study society with the idea of better controlling it—i.e., to direct it intelligently toward a goal. Assuming that social realities—cultures and civilizations—are amenable to scientific research, anthropologist and historian wish to discover the significance of certain broad general movements in society, in the hope that by studying such developments they may steer its course accordingly.

"Living in the Twentieth Century" amid skyscrapers, submarines, dirigibles, automobiles, palatial steamers, radio, electric lights, synthetic chemistry, and all the achievements of contemporary science does not mean that we are any better off spiritually than the primitive savage living in the most uncomfortable surroundings. All these things are means, not ends in themselves; their usefulness

lies in the services and satisfactions which they render to mankind. The important question is whether they give us a broader outlook upon life and help us to live more abundantly.

CHAPTER IX

SUGGESTED LIST OF READINGS

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Chapter X

BACK TO THE "GREAT TRADITION"

Philosophy has been criticized for being too artificial and remote from the life and needs of the present day. The mechanists have gone so far as to say that philosophy is dying because it is unscientific, makes unprovable assertions, and uses methods not capable of external observation, physical tests, and mathematical measurement.[1] Having found no way of accounting for consciousness on the assumption that all life is mechanical, they deny its existence altogether. To their way of thinking, the world is exclusively material, mechanically determined throughout. All things are explainable by mechanical procedure, and in no other way can we obtain any valuable information which will enable us to understand reality.

Notwithstanding such scoffing at the futility of philosophy, the mechanist is a philosopher in spite of himself —these very statements, based on unprovable assumptions and a hypothetical completion of the reports brought to his senses, reveal his inconsistency. He may assert that there is no value in the nonmaterial factors of existence, yet he must live as if he too believed in something other than what his senses reveal to him. Whether or no, he is forced to decide whether the world is intelligible or chaotic, purposive or mechanical. The mechanist, in short, has assumed that materialism is correct, and that all other

[1] See Proceedings, Sixth International Congress of Philosophy (Longmans, 1927), Will Durant: "Is Philosophy Doomed?"

philosophies are of no consequence. According to his philosophy, there is no spontaneity in life; every action of every human being, every note in a Beethoven symphony, every line in a Shakespearean play, every stroke of a Raphael painting was foreordained from the beginning of time, forever fixed and unalterable. These are legitimate assumptions of a philosopher, but ill become a scientist who prides himself on the exactitude of his statements.

This attitude is typical of the popular philosophies prevailing at the present time.[2] Discouraged at the failure to realize our ideals, many deny that there *are* any ideals *to* realize. In their place they would substitute the pessimistic doctrine that we must bow before the forces of Nature and accept uncritically the dictates of a blind and purposeless mechanism. Mind, or consciousness, which formerly played the leading role in human conduct, now takes a minor part; stripped of its former functions, nothing is left but a name. Fearful of the word "soul," the neo-realists have reduced mind to a mere relation between objects. Yet this has turned out to be a relation of *meaning*, and once more they have the troublesome "consciousness" on their hands.

The Pragmatists reject the "idealistic fallacy" that would set up absolutes or norms to direct our behavior. They deny that such things exist, for to them the only values in life are those proved by experience. Nevertheless, when it comes to the final test, we find the pragmatist unable to disregard the normative aspects of life. For example, John Dewey, in his *Ethics*, sets up a norm

[2] See especially Joseph Wood Krutch: *The Modern Temper*.

of behavior that reveals his inconsistency. Discussing the relationship of the individual to society, he criticizes the narrowing quality of using things simply for self-realization. He looks toward "the kind of self formed through action faithful to relations with others." This, he feels, will be "a fuller and broader self than one which is cultivated in isolation or opposition to the *purposes and needs of others*" (italics mine). The other ways of life "stint and starve selfhood by cutting it off from connections necessary to its growth." The final happiness of an individual, in his opinion, results in certain enduring interests in objects common to all. It is found here rather than in definite external achievements, "because this kind of happiness alone is not at the mercy of circumstances." [3]

In the pragmatist philosophy, as in other philosophies of the present, there seems to be something halfhearted in the disavowals of spiritual factors, as is evident from their apologetic treatment of mind, or consciousness. Consciousness has been treated under various guises as a "quality-complex," "relation between objects," or "organic attitude"—the thoughts which it formerly thought become logical entities in an independent shadowland of subsistences. The Neo-Realists, headed by Perry, do not abandon consciousness entirely, but place chief emphasis upon the animal reflex, applying the behavioristic method as explanation of human conduct. To them, purpose, like complex and instinct, is just the particular neural set or

[3] Dewey and Tufts: *Ethics* (Henry Holt, 1932), pp. 335, 336. Perhaps an even better illustration of this point might be given by calling attention to Dewey's views in the classic, *Democracy and Education,* esp. Chs. X and XVIII.

"tendency" of the organism.[4] This accounts for the action we call teleological, purposive, intelligent. They seem to overlook the fact, however, that the whole theory of behaviorism would collapse unless there were consciousness to fall back upon at every step.

Despite the painstaking efforts to get rid of consciousness by dressing it up in new garb, giving it a new name, it still persists as the chief problem of contemporary thought. For this reason, it is impossible to ignore the tenets of idealistic philosophy, which has kept constantly in touch with the new movements and seeks to do them justice. Contemporary idealism, like the newer movements, begins with a frank recognition of objective reality. It likewise studies the world of experience and finds the same relationship to exist between subject and object as that discovered by the new schools.

Idealism now relates itself to the problems of an expanding intellectual world. It is no longer a creed, but an attitude, a way of interpreting human experience; a living tradition, not a religious veneration of accumulated philosophical dogmas.[5] Today, with the disavowal of older conceptions of "matter," the hard and fast lines between "idealism" and "materialism" have passed. The fundamental difference between the two is philosophical. The idealist is deeply interested in the attitudes and results of both the physical and social sciences. He is ready to respect any serious philosophical account of the physical world. But he resents the claim of the mechanists to an

[4] See *The New Realism—Co-operative Studies in Philosophy,* by R. B. Perry, E. B. Holt, and others (Macmillan, 1925).

[5] See Clifford Barrett: *Contemporary Idealism in America* (Macmillan, 1932), Introduction.

exclusive interpretation of reality based upon the conclusions of scientific data.

Contemporary idealistic philosophy is not apposed to the objective method in experimental investigation. The idealist is willing to grant that the mechanistic explanation is a convenient method of accounting for certain aspects of rational life, but denies that it can offer a complete or adequate account of all its aspects. He feels that no intelligible account of the world can neglect the spiritual factors of existence. After all, the only form in which consciousness can exist is that of synthetic interpretation. The spiritual and mechanical factors are not genuine antagonists, for it is only in the service of purpose and values that the "mechanical" may win significance.

The idealist, with his emphasis upon the necessity of understanding the partial in relation to larger units than itself, and finally to the whole, looks upon the various aspects of thought and life in terms of the individual as a totality. The individual person, in turn, with his purposes and activities, must be studied in relation to human society, the development of which in some way realizes the order of the universe. Thus, idealism believes that rational direction of individual and social conduct must always be in terms of purposes and ends—that teleological activity provides the basis for the most intelligent and rational life.[6]

The application of the empirical method of science has had unsettling results upon contemporary religion as well as upon philosophy. An attitude of atheistic naturalism, of humanistic idealism, is the order of the day.

[6] *Ibid.*

Our intellectuals have thrown overboard religion as trust in God, or communion with the Unseen. To them religion is of value only as an attitude of life making for social peace and betterment. One group has failed to think altogether and have grown indifferent to the problems of the higher life; another have shut their eyes to the facts of science and modern knowledge and are living in a fool's paradise of idealism; still another swear by a vague social idealism without form and void, high-sounding but signifying nothing. On every side of life, the old ideals have ceased to carry conviction, and we switch from one popular doctrine to another.

It is interesting to note, however, that Science, which has caused the disturbance, is trying to pour oil on the troubled waters. Some of the greatest philosophers today are scientists with a broad vision of life's meaning.[7] Dissatisfied with the extravagant claims of crude materialism, they are making a plea for the higher values of life. They have constantly reiterated the fact that a scientific view of the world does not make God superfluous. They refuse to believe that the course of life is a series of accidents, but conceive it as an ordered ascent from protozoa up to man, and from the primitive, uncivilized man to the more spiritual type. In their opinion, the subjection of the cosmic process to law, and its tendency to produce higher values, suggest a *creative principle* operating through the course of nature, bringing about ever new and higher forms of life on the stage prepared for it by the lower. This creative urge, this tendency toward in-

[7] See Bernard Bosanquet: *Science and Philosophy* (Macmillan, 1927); G. P. Adams: *Idealism and the Modern Age* (Yale, 1919).

creasing diversity and perfection indicates the reality of an ultimate Spirit which the religious call God, and the philosopher, the Absolute.

It is true, as the mechanists claim, that the behavior of man has much in common with plant life and animals, but in addition man has power to understand his place in the world's scheme. He can control his growth while plants and animals cannot. We can use the materials with which we are supplied to promote our spiritual ideals. Human development is not a mere passive unfolding of which each step is rigorously determined by the preceding, but a process of active reconstruction, conditioned by the materials furnished by experience.

In its assaults upon the nonmaterial factors of life, mechanism has done not wisely but too well, and now threatens the citadels of Science itself. Beginning with a ruthless application of the intellect to the deepest initiatives of the human spirit, it now questions the very concepts and laws of science—no longer do they have ultimate validity, but are considered as merely useful instruments for the control of phenomena in the interests of life. Starting with the assertion of the autonomy of science, its complete separation from moral and spiritual values, mechanism has become a philosophy of illusion which includes science itself. Scientists today are afraid to look truth full in the face, and the terms "purpose" or "conscious striving" have been placed upon the Index of forbidden concepts.

Scientific knowledge is an important part of our civilization, but it alone does not reach the real meaning of life. We need the help of the spiritual factors, as evidenced in the faith of religion and the intuitions of art,

and philosophy, and the cultural sciences. "The plain fact of human experience," says Hartley B. Alexander, "is that men believe in and desire goodness and beauty, and feel the dearth of it, and grope after it. The plain fact is an act of faith in things unseen, things hoped for—and this act we call life." [8] The disappointments and disillusionment of modern times are bringing modern man back to the quest for the eternal values. Religion and philosophy, united in their mutual quest for the highest truth, have a task as never before to set the times aright. They have not always moved in harmony; but if mankind is to be saved, they must recover their community of understanding and lead us to the higher realms of the spirit.

Despite its pretensions toward exact measurement, orthodox science is based upon the belief in an objective and real world, whose events are connected in an orderly and prescribed manner, occurring independently of our will and thought. In order to classify the phenomena of life as purely mechanical, it has been necessary to picture the living organism as a machine—a thing of various material parts, acting on each other by mechanical forces. But this is simply the imagination of the scientist, for there is no common factor between vital actions and mechanical forces. Life is too complex and variable for its phenomena to be predicted with accuracy, to be measured in the test tube, or with a micrometer caliper.

Purely mechanical explanations have proved inadequate for the understanding of even the simplest forms of life, and have failed completely in the understanding of the

[8] *Nature and Human Nature* (Open Court, 1923).

phenomena of Mind. The mechanists have attempted in vain to exclude consciousness from the field. They have laughed at the astrologers for believing in the influence of the stars upon our destinies, but it is certainly no more credulous to believe that character is determined by the relative position of the planets than to assume, as do the Behaviorists, that our thoughts are caused by the relative positions and motions of the material atoms constituting the substance of our brains. The astrologist, at least, had the advantage of dealing with real bodies which we can observe and measure, but the mechanists have only the hypothetical and invisible atoms created by their own fancy.

It is becoming more and more obvious today that the physical sciences have failed to make intelligible the spontaneity of life, or the comprehension of things in space and time. Contemporary biological scientists have shown that the living organism has in its constitution an integral character—a subtlety of co-ordination and spontaneity of adaptation that no knowledge of chemistry or physics can fully account for. They tell us that matter itself becomes fully intelligible—reveals its full possibilities—only when life supervenes upon it. No study of biology or zoology would enable us to predict among living things the occurrence of an Edison, an Einstein, a Marconi, or a Kreisler. Even in the limited sense of biological survival, life is understandable only when regarded as a center of values, values realized in the processes of growth and survival.

The tendency of present-day thought has been to emphasize science as the exclusive method of apprehending

reality.[9] But at best science leaves us with abstract systems. It cannot, as science, give us back the unique reality of individual activity. Science has as its basis the same conviction, or intuitions, which furnish the background for moral, religious, and esthetic activity. These intuitions furnish the goal of scientific activity itself. The search for order and the love of form, which is the individual aspiration of the scientist, the moralist, and the artist, is characterized in the religious as the search for God. In each case there is manifested a belief in things unseen, a constant endeavor to go beyond what is revealed to the senses, the pursuit of a value concept, originating in the mind of the observer.

Through the idea of value, then, we seem to be returning to a philosophy which would restore mind to its rightful place in nature. Through the increasing attention paid to the influence of mind upon behavior, philosophy and psychology today are returning to the classical conceptions emphasized by Aristotle and Hegel. The shallow conceptions of mind that have prevailed have proved vastly inadequate to explain the complex aspects of human behavior.[10] The close relationship of the cultural sciences

[9] Discussion of this point is endless. For representative samples of the arguments pro and con, see especially the following:

Contemporary American Philosophy (Macmillan, 1930), contributions by A. C. Armstrong, John E. Boodin, Arthur Kenyon Rogers, Robert Mark Wenley, Frederick J. Woodbridge.

Contemporary British Philosophy, J. H. Muirhead, Editor (2d Series, Macmillan, 1925), contributions by J. H. Muirhead (Editor's Preface), R. F. A. Hoernle, C. E. M. Joad, W. R. Sorley, J. Arthur Thomson.

I am particularly indebted to the writings of the above for some of the views expressed herein (M. M. B.).

[10] See G. Watts Cunningham: *Idealist Argument in Recent British and American Philosophy* (Century, 1933).

and present-day psychology makes it evident that individual behavior can be understood only to the extent that mental activity is linked up with the development of society. We are at last beginning to see that a proper interpretation of history can be obtained only by a study of the motives and purposes that have led mankind into various activities—that value concepts, if you please, have been in the foreground. It looks as if the "silly old absolutes" of the idealists are coming back again. Mind is returning to its privileged position in interpreting the world as an organic totality instead of a mechanical aggregate of parts having no connection.

That this reversion to idealistic conception is fast gaining ground among thinkers in various parts of the world is evident from the papers read by philosophers at the Sixth International Congress of Philosophy in 1926.[11] Among the British philosophers, for example, there is a broadening of view, a widening of outlook, shared by idealist and realist alike. John Laird, discussing contemporary philosophy in Britain, calls particular attention to this change of thought. There is a growing disposition to believe, says he, that the resolute efforts of the sciences toward the evolving of new conceptions have had the effect of promoting philosophical speculation of the broader sort, more especially that concerning the relations between spirit and nature, mind and matter, mechanical routine and creative invention. In his opinion, British philosophy is breaking away from the crude dualism of mind and matter, recognizing the close relationship of the two, and hold-

[11] See Proceedings, published by Longmans (1927). See also Schaub, E. L.: *Philosophy Today* (Open Court, 1928).

ing that there are, perhaps, even indications of the "emergence" of something higher. The hope lies not in the concept of "emergence," however, but rather in the range and emancipation of interest in these matters. British philosophers, then, no longer dispute over monism or dualism, but through study of matter-life-mind hope to find something "authentic and inexpugnable."

Contemporary philosophy in South America, too, shows pronounced idealistic tendencies, according to Coriolano Alberini of Argentina.[12] Positivism has dominated Argentina and South America as a whole for forty years, but has not produced anything of value in philosophy proper. He sees evidences at the present time of a new philosophic movement, set in motion through the avenues of mathematics, biology, history, and pure science. This movement coincides with, if it is not the cause of, the gradual waning of the positivistic hold. Among contemporary leaders of thought in Argentina, there is a decided preference for the idealistic philosophies of such European philosophers as Bergson and Benedetto Croce.

In Italy, likewise, idealistic philosophy appears to be in the ascendancy. Raffaello Piccoli, for instance, discounts the purely technical aspects of philosophy and argues for a philosophy of the spirit.[13] To his way of thinking, every philosopher of every sort is at heart an idealist—have not philosophers of every nation tried, by different ways of approach, to discover the reality of life concealed in the depths of their hearts and minds? After all, the acceptance of the idealistic character of thought is essential to the proper understanding of the world. By painstaking

[12] *Ibid.* [13] *Ibid.*

research toward some particular end, the scientist may promote scientific discovery, but he does not thereby discover reality—the true philosopher cannot be content with less than the totality of experience.

In keeping with this contention of Piccoli, it is an interesting fact that at the Eighth International Congress of Philosophy, held at Prague in 1934, a discussion of wide philosophical problems and their direct application to life was the order of the day. In the chief address of the Congress, Dr. Benes, Foreign Minister of Czechoslovakia, expressed a wish that philosophers would replace the present chaos of relativity with well-founded *norms* of action. The majority of the group asked what philosophy could contribute to society today when democracy and religion and other institutions and ideals of man have suffered in prestige. Some maintained that the yearning for the Absolute is the mainspring of philosophy. Dr. Jacques Chevalier, of the University of Grenoble, supported the thesis that the social, political, ethical, and religious crises of the present are due to man's abandonment of faith in the Absolute. In the very recognition of our limitations and deficiencies, he argued, lies the proof of the existence of Absolutes or norms by which we are guided. Thus, despite the specious arguments of the economic determinists, we are again forced to recognize the fact that in the fields of economics, politics, and sociology, norms of value cannot be dispensed with. Human life is too varied to be confined within the realm of experience alone.

Stressing this point, Dr. Morris Cohen scores those who seek to confine reality to what is actually experienced. Only a superficial conception of science "at the basis of what used to be called materialism, and is now called behav-

iorism," says he, "supposes that science can deal only with what is. But this is just nonsense. The actual has meaning for science only when judged in the light of some ideal or possible alternative. Indeed all mathematical and theoretic science deals with ideals and possibilities." [14] He cites Henri Poincare's *Science and Hypothesis* to show the important role ideas as hypotheses play in selecting what "facts" shall be considered relevant to the inquiry at hand.

Professor Cohen criticizes the behaviorists both in law and science who would restrict the scope of logic to deduction from rules already established or recognized. They suppose that true science deals only with what actually exists rather than with the whole field of possibility. Any attention to the process of experimental verification, he points out, shows the necessity of considering the logical consequences of rival hypotheses. Rationality, after all, does not exhaust existence, he argues. "Rational distinctions hold in the field of being which is presupposed, just as various lines on a blackboard may indicate the various objects represented on it, but do not fully represent the blackboard itself which contains them. . . . If this doctrine that our universe thus contains something fundamental to which we may point but which we cannot fully describe be called mysticism, then mysticism is essential to all intellectual sanity . . ." [15]

In all our daily strivings most of us are sustained by a belief, or at least a hope, that the universe is friendly and will meet us halfway. Were we content with material goods, this need would disappear with the increasing con-

[14] *Law and the Social Order* (Harcourt, Brace, 1933), p. 188.
[15] *Reason and Nature* (Harcourt, Brace, 1931), p. 164.

quest of nature by science and industry. But even in the presence of great wealth and material prosperity, there is still a longing of the human spirit for something beyond ourselves. We are not content merely with houses, raiment, and automobiles, or personal success in business. Through the exercise of ingenuity we may achieve wealth and fame, but the subtler values are more difficult to obtain. More than ever before, we are beginning to realize that the advancement of science or the pursuit of knowledge are meaningless unless we can be permitted to trust that *something not ourselves* is at work to supplement human efforts.

The gospel of mechanism has not proved as satisfying as its high priests predicted. Today there is a strong reaction against the "modernistic" tendencies of the last twenty-five years. We are gradually discovering the inadequacy of philosophic modernism and are returning to the tents of idealistic philosophy, or the "Great Tradition"—that philosophy which finds the world ultimately meaningful and intelligent. The interpretation of "science" to which modernism has parasitically attached itself has been rendered obsolete by important developments within science itself.

As Dr. Wilbur Urban so aptly shows in *The Intelligible World*, the picture drawn by Bishop Berkeley, in his *Alciphron*, of the "minute philosopher" is equally true today of the mechanistic thinker. The minute philosophers are characterized by Crito as "a sort of sect which diminish all the most valuable things, the thoughts, views, and hopes of men; all the knowledge, notions, and theories of the mind they reduce to sense; human nature they contract and degrade to the narrow, low standard of ani-

mal life and assign us only a small pittance of time instead of immortality." [16] So today, the mechanists would have man as merely the passive creature of his environment, whose every act is merely a reflex conditioned in advance, and whose aims, hopes, and ambitions are as "sound and fury, signifying nothing."

On the other hand, the truly great philosophers have a "sense for magnalities," insist upon seeing things in the large; who, while not disdaining analysis, always recognize its limits and understand fully the difference between explaining things and explaining them away. To this great tradition, the Platos, the Aristotles, the St. Augustines, the St. Thomases, the Fichtes, and the Hegels have belonged. All of these have been essentially human. They have not reduced, contracted, or degraded humanity, but have sought to see things *under the aspect of eternity.* At the present time, when life seems to have no direction, it is most refreshing to see a return to the belief in an Idea, of an order of perfection *which goes beyond* and supplements the fragmentariness of our experiences, and gives to life a meaning.[17]

Idealistic philosophy is in truth gaining in importance. Leading thinkers now recognize the uniqueness of mental life and the reality of mind as the subject of conscious experience. Among psychologists the adherents to the doctrine of self-consciousness are noticeably greater than ten years ago. In general, although the majority of recent thinkers are still doubtful respecting the part which consciousness plays in human behavior, a number of able

[16] W. M. Urban: *The Intelligible World,* Ch. I, p. 11. By permission of the Macmillan Company (1929).
[17] *Ibid.*

leaders steadfastly maintain the importance of mind as a causal factor in civilization.

Among the most outstanding idealistic philosophies of today are the writings of Rudolf Eucken.[18] Although subject to much criticism by those who do not agree entirely with his philosophy, nonetheless his emphasis upon the life of the spirit is finding new recognition today. Eucken's philosophy is based on the thesis that life is fundamentally spiritual—not purely psychological, treating of men out of relation to a world, and ending with the examination of psychical states; not merely cosmological, dealing with the world out of relation to man—but both of these in relation to man. Self-consciousness is the unifying principle; it is only by relation to life as self-consciousness that we can predicate anything of meaning or value. The life of man includes his relation to the world. The pursuit of the ideals of truth, beauty, and goodness carries far beyond considerations of the welfare of the individual, society, or humanity as a whole.

Contemporary thought is concerned with the search for a more forceful reality, based upon the experience of the senses. Modern systems of life, based upon scientific data, have opened up new vistas of thought, have revealed new tasks, and have given to life a powerful impetus. But all this is of doubtful value if particular experience and achievement narrow one's view of life as a whole, and impress upon it their peculiar stamp. Life becomes intolerably one-sided and its wealth of experience is cut down to fit into a given framework. More and more it becomes evident that achievement in individual matters can

[18] See his *Life's Basis and Life's Ideal* (A. and C. Black, 1918), on which this discussion of his views is based.

be but insignificant, if life as a whole is in a state of stagnation and exhaustion. Those who work too closely in some narrow sphere lose all sense for the whole.

Modern systems are unable to banish supersensual powers and to limit life to sense experience, without attributing to sense experience a content and value greater than experience itself justifies. The mechanist ascribes to nature, which is to him only a co-existence of soulless elements, an inner connection and a living soul. Only thus can he revere it as a higher power, as a kind of divinity. In his system, nothing may be acknowledged which transcends sense experience, hence there can be no universal which pervades and holds together the diverse elements. Reality thus becomes simply a co-existence of single pieces. A pantheism, vague and formless, is seized upon as cure-all, to satisfy man's craving for an orderly whole. This "something" seems to accomplish so much and to demand so little, makes the impossible possible—but in the end proves to be a mere will-o'-the-wisp. Yet such a conception would displace religion and furnish the basis for the guidance of life.

The new philosophies, says Eucken, have raised the standard of human existence enormously in regard to power and content; but they have done this at the cost of its spiritual concreteness. They have suppressed the life of inner spiritual experience and denied the problems of man's inner nature. They are unable to understand man's grappling with the infinite or with his own nature; they recognize no conflict between freedom and fate; and no inner development of the soul—all because their views of life as a whole take away all depth, and transform

existence into a mere series of appearances. What shall it profit a man, if through attention to such philosophy the center of his life becomes empty and weak, if there emerges no meaning in life itself? What is the value of all the advancing and refining of human existence if it does not bring with it a genuine spiritual culture and an inward elevation of mankind?

We prate constantly of "progress" and of the thrill of "living in the twentieth century"; but despite our far-reaching scientific and industrial achievements contemporary life has failed to satisfy the deepest cravings of the human spirit. In the face of the complexity and splendor of present civilization, a large proportion of our lives is distraught with nervous haste, conflicting purposes, lack of a definite goal, and a haunting fear of we know not what. There is hardly a period in all history in which civilized man has been more depressed and pessimistic with regard to the future than at the present time, by reason of the perverted uses to which we have put the "glorious inventions" and "marvelous discoveries" of modern science. To make matters worse, the old landmarks of faith and appraisal of values have disappeared one by one until we have been cut adrift upon a vast uncharted sea of indecision and shifting allegiances. Disillusioned by the seductive promises of the high priests of orthodox science, and lacking the old faiths and valuations, we are surrounded by a mass of conflicting opinions, and know not which way to turn.

"What we appear to require above everything else," says Ross L. Finney, in *A Sociological Philosophy of Education*, is a new world view, a new insight into the essential

values of existence." [19] The world in truth needs a new soul, a new set of values. When men lose faith in the power of ideas, they become like squirrels in a whirling cage, exerting themselves fearfully, but arriving nowhere in the end. Those who attribute the origin of ideas to external influences in the environment—whether economic, geographic, or otherwise—seem to forget the part played by constructive reasoning in the development of much-vaunted "civilization." They overlook the fact that the mind of men is self-active and needs no compulsion from without to start the individual upon conscious, purposeful activity. Determinists of all sorts have heaped ridicule upon the ideological theory of progress—the view that the character of human life depends upon ideas and ideals. Such criticism is well taken where ideals have worshiped in the abstract. But it is unjustified when we realize that it is the contact of man's intellectual with his physical environment which produces progress, and not the abstract evolution of ideas.

It is most significant that although Dr. Bertrand Russell, usually considered one of the High Priests of Mechanism, who proposes to see only the clash of atoms and molecules in the Universe, nevertheless, in one of his recent books, *The Scientific Outlook*, finds somehow that we are living in a world of values. For he admits that science has the power to do both good and harm, and would welcome any restraining influences for good. Russell condemns the pursuit of power and the selfishness of scientific technique, and feels that the aims of life should be higher

[19] Ch. IV, "Problems of Educational Objectives," p. 75. By permission of the Macmillan Company (1928).

than those which minister merely to the physical needs. He believes that there is more in life than the mere manipulation of mechanical forces for selfish ends, and finds great joy in the things which science cannot measure—the red sun at eventide, the dew sparkling in the morning, and the snow shining under a frosty sun. Science is really worth while where it enables us to enjoy these things. "But where it takes out of life the moments to which life owes its values, science will not deserve admiration, however elaborate it may lead men along the road to despair. . . . Science as the pursuit of power must not obtrude upon the sphere of values, and scientific technique, if it is to enrich human life, must not outweigh those ends which it should serve." [20]

Mind today is still the ruling force in human endeavor. Its freedom of action, invention, and will to achieve underlie every material and social product of civilization, either past or present. Whether our civilization is doomed for a decline, as Spengler predicts, or whether we shall reach new heights of achievement, depends upon clearness of vision, unity of thought, and a definite standard of objectives in social achievement and the elevation of human conduct. "Without vision the people perish" was never more true than at present, and only our ability to look beyond the facts of science will save us from another world catastrophe. Other great nations have fallen because they stressed the material factors and lost sight of the great adventure of the spirit. . . .

[20] W. W. Norton (1931).

CHAPTER X

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